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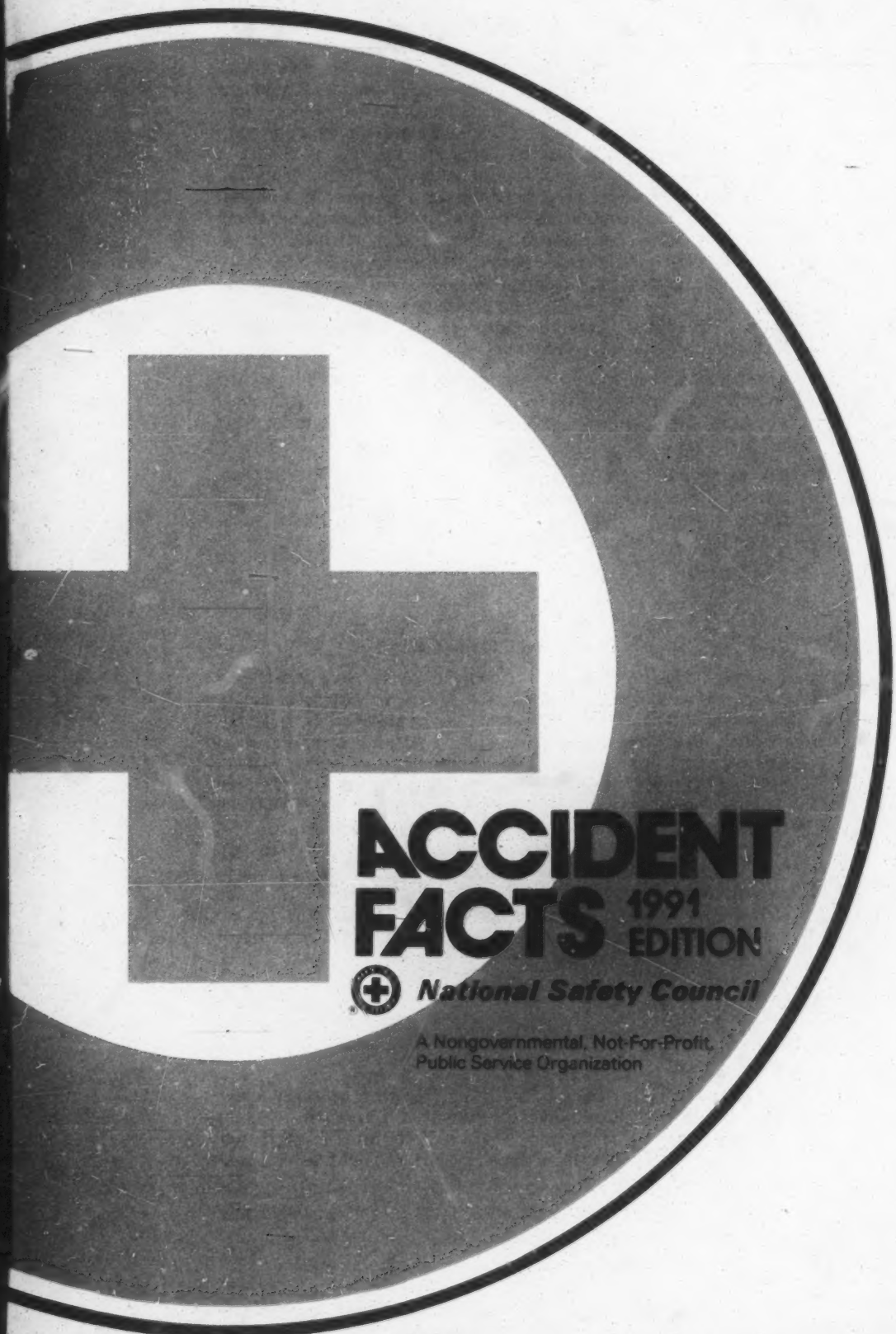

ACCIDENT FACTS 1991 EDITION

National Safety Council

A Nongovernmental, Not-For-Profit, Public Service Organization

The National Safety Council, chartered by act of Congress, is a nongovernmental, not-for-profit, public service organization devoted solely to educating and influencing society to adopt safety and health policies, practices, and procedures to prevent losses arising from accidents and adverse occupational or environmental exposures. *Accident Facts,* the Council's annual statistical report on accidental deaths, injuries, and costs, was prepared by the Statistics Department under the direction of **Alan F. Hoskin,** Manager, by **Karen Ginsburg, Mary E. Johnston, Steven R. Landes, Terry Miller,** and **Ursula Zuehlke.** Production management was provided by **Katie Kuhfuss.** Art, graphs, and charts were created under the direction of **Frank Waszak,** Art Director, by **Bob Sunyog.** Work injury and illness incidence rates and fleet accident rates of reporters to the National Safety Council were prepared by **Jean Adams** and **Rachael Corp** in the Safety and Health Motivation Programs Department.

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FOREWORD

Progress continued to be made in 1990 in the endeavor to prevent accidental deaths. Record-low population death rates were established for Total, Work, and Home accidental deaths. For Motor-Vehicle-related accidental deaths, the population death rate in 1990 was the lowest since 1944 and the mileage death rate was a new record low. See the data on pages 26–27 and 72–73.

Accidental poisonings by solid and liquid substances maintained its third place ranking in 1990 behind motor-vehicle accidents and falls. It had been in fifth place in 1987 and overtook both drownings and fires and burns in 1988. Significant increases in accidental poisoning deaths occurred in the categories that include cocaine and heroin. See the graphs on pages 9 and 99 and the data on pages 32 and 98.

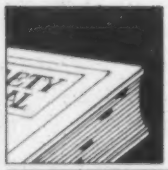
Some changes have been made in this 71st edition of *Accident Facts*. More color is used in tables throughout the book to highlight information that we consider to be most important to our readers.

In response to suggestions from readers, both the Bureau of Labor Statistics and National Safety Council tables of occupational injury and illness incidence rates have been expanded from two pages to three (see pages 44–49). This allows us to show the rates for many more industries. Readers should also note that these tables are now based on the 1987 edition of the *Standard Industrial Classification Manual* rather than the 1972 edition.

A new feature called "Cost Equivalents" has been added to page 25 where "While You Speak!" also appears. It breaks down the incomprehensible billions of dollars of injury costs and expresses them in terms to which everyone can relate.

As usual, there are several new special articles. The Work section has data on the average workers' compensation costs for various kinds of injuries (page 40). The Motor-Vehicle section has a special on the kinds of injuries received in motor-vehicle crashes (page 75). The Public section has more information on lightning- and tornado-related deaths and injuries (page 89). An article on firearms-related deaths and a graph of trends in poisonings are in the Home section (pages 97 and 99). The Environmental Health section covers household hazardous wastes and the emerging hazards of low frequency electromagnetic radiation (page 103).

We hope our readers find these changes useful and worthwhile. Comments and suggestions concerning the content of *Accident Facts* are welcome.



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ALL ACCIDENTS, 1990

Accidental deaths continued a downward trend in 1990. The death total was 93,500, a decrease of 2,000 or 2 per cent from the 1989 total of 95,500. An increase in public deaths was offset by decreases in motor-vehicle, work, and home. The work death total for 1990 was the lowest on record.

The population death rate also continued a downward trend. The 1990 death rate per 100,000 population was 37.5, down 3 per cent from the 1989 rate of 38.7. The 1990 rate represents the lowest death rate on record. The death rates for work and home are also the lowest on record.

	Deaths	Change from 1989	Deaths per 100,000 Persons	Disabling Injuries[a]
All Classes[b]	**93,500**	**–2%**	**37.5**	**9,000,000**
Motor-vehicle	**46,300**	**–2%**	**18.6**	**1,700,000**
Public nonwork	42,500			1,600,000
Work	3,600			100,000
Home	200			[c]
Work	**10,500**	**–2%**	**4.2**	**1,800,000**
Nonmotor-vehicle	6,900			1,700,000
Motor-vehicle	3,600			100,000
Home	**21,500**	**–6%**	**8.6**	**3,200,000**
Nonmotor-vehicle	21,300			3,200,000
Motor-vehicle	200			[c]
Public	**19,000**	**+2%**	**7.6**	**2,400,000**

Disabling Injuries[a] by Severity of Injury, 1990

Severity of Disabling Injury	Total[b]	Motor-Vehicle	Work	Home	Public
All Disabling Injuries[a]	**9,000,000**	**1,700,000**	**1,800,000**	**3,200,000**	**2,400,000**
Permanent impairments	340,000	140,000	60,000	90,000	60,000
Temporary total disabilities	8,600,000	1,600,000	1,700,000	3,100,000	2,300,000

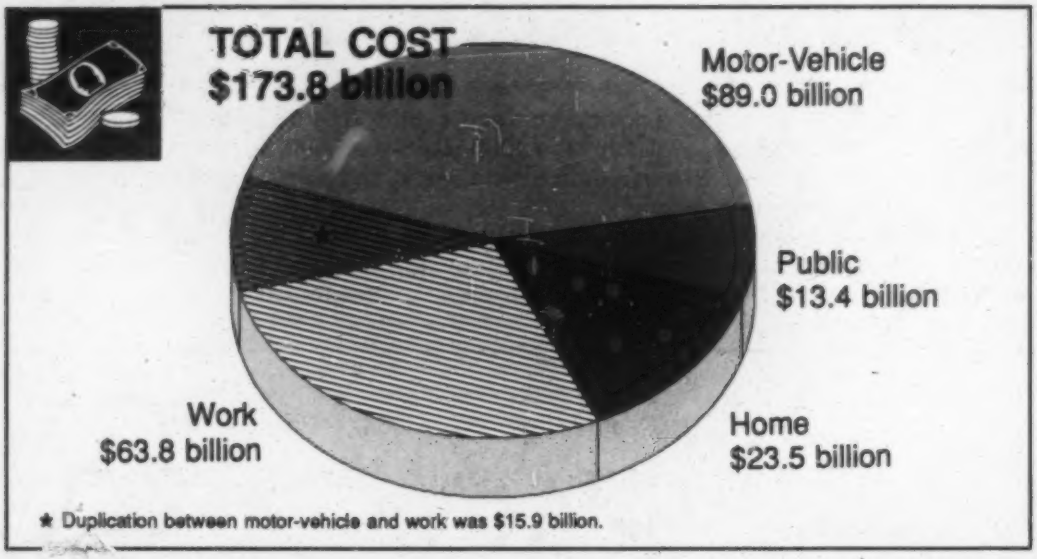
Source: National Safety Council estimates (rounded) based on data from the National Center for Health Statistics, state industrial commissions, state traffic authorities, state departments of health, insurance companies, industrial establishments and other sources. See glossary on page 105 for definitions.

[a]**Disabling beyond the day of accident.** Injuries are not reported on a national basis, so the totals shown are approximations based on ratios of disabling injuries to deaths developed from special studies. The totals are the best estimates for the current year; however, they should not be compared with totals shown in previous editions of *Accident Facts* to indicate year-to-year changes or trends.

[b]Deaths and injuries above for the four separate classes total more than national figures due to rounding and because some deaths and injuries are included in more than one class. For example, 3,600 work deaths involved motor vehicles and are in both the work and motor-vehicle totals; and 200 motor-vehicle deaths occurred on home premises and are in both home and motor-vehicle. The total of such duplication amounted to about 3,800 deaths and 100,000 injuries in 1990.

[c]Less than 10,000.

Costs of accidents by class, 1990



The total cost includes estimates of economic costs of accidental deaths and injuries together with uninsured work losses, vehicle damage costs, and fire losses. Wage losses, medical expenses, and insurance administration are included in all four classes of accidents. Cost components unique to each class are identified below.

Motor-vehicle costs include insured property damage from moving motor-vehicle accidents. Not included are the cost of public agencies such as police and fire departments, courts, uninsured losses to employers of off-the-job accidents to employees, the value of cargo losses in commercial vehicles, and court-awarded damages in excess of direct losses.

Work costs include an estimate of uninsured costs arising out of work injuries and the value of property damage in on-the-job motor-vehicle accidents and fires.

Home and public costs include estimated fire losses but do not include other property damage costs or the uninsured cost to employers of off-the-job injuries to employees.

Certain Costs of Accidents by Class, 1990 ($ billions)

Cost	Total[a]	Motor-Vehicle	Work	Home	Public Nonmotor-Vehicle
Total	**$173.8**	**$89.0**	**$63.8**	**$23.5**	**$13.4**
Wage loss	48.2	25.2	10.2	7.9	7.2
Medical expense	28.4	6.2	8.7	10.0	4.1
Insurance administration[b]	30.1	22.3	10.3	1.0	0.7
Fire loss	9.7	(c)	3.7	4.6	1.4
Motor-vehicle damage	28.2	28.2	1.7	(c)	(c)
Uninsured work loss	29.2	7.1	29.2	(c)	(c)

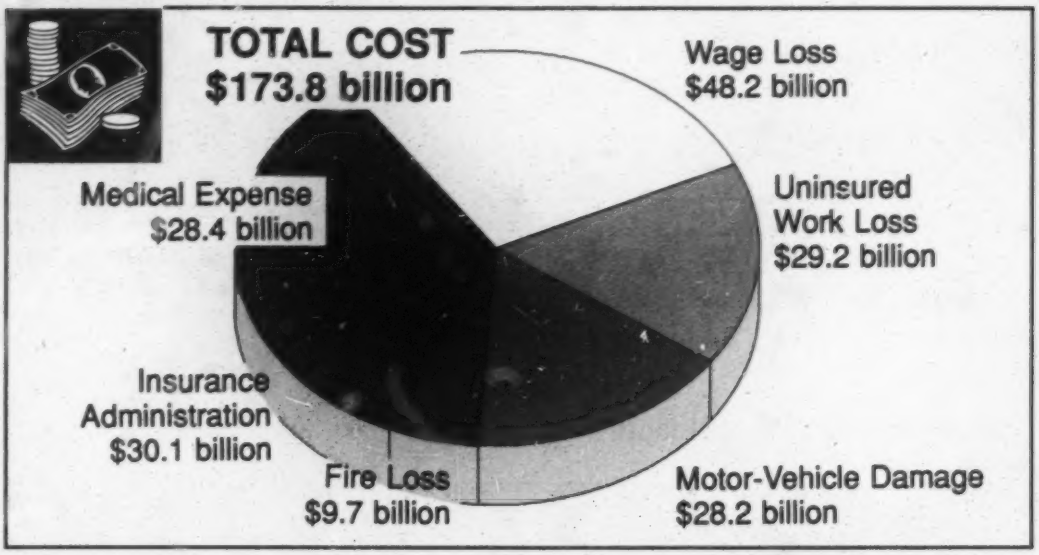
Source: National Safety Council estimates. Cost estimates are not comparable with those of previous years. As additional or more precise data become available, or as procedures are revised, they are used from that year forward, but previous years are not revised.

[a]Duplication between work and motor-vehicle, which amounted to $15.9 billion, was eliminated in the Total.

[b]Home and public insurance administration costs may include costs of administering medical treatment claims for some motor-vehicle injuries filed through health insurance plans.

[c]Not included, see comments above.

Costs of accidents by component, 1990



Wage loss. Because a worker's contribution to the wealth of the nation usually is measured in terms of wages, the total of wages lost due to accidental injuries provides a measure of this lost productivity. For nonfatal injuries, estimates of actual wage losses are used; for deaths and permanent disabilities, it is the present value of all future earnings lost. An estimate of the replacement-cost value of household services of employed persons and homemakers was added to the wage loss estimate this year.

Medical expense. Doctor fees, hospital charges, the cost of medicines, ambulance and emergency medical services, and future medical costs are included.

Insurance administration cost. This is the difference between premiums paid to insurance companies and claims paid out by them; it is their cost of doing business and is a part of the accident cost total. Claims paid by insurance companies are not identified separately, as every claim is compensation for losses such as wages, medical expenses, property damage, etc. Not included are administrative costs of health maintenance organizations and property damage claims in home and public accidents.

Motor-vehicle damage. Includes the value of insured property damage to vehicles from moving motor-vehicle accidents. The damage is valued at the lesser of the repair cost or market value. The cost of normal wear and tear to vehicles is not included.

Fire loss. Includes losses from both structure fires and nonstructure fires such as vehicles, outside storage, crops, and timber.

Uninsured loss from work injuries. This is the money value of time lost by uninjured workers. It includes investigating and reporting injuries, giving first aid, and lost production time. It is conservatively estimated as equal to the sum of lost wages, medical expenses, and insurance administration cost of work injuries.

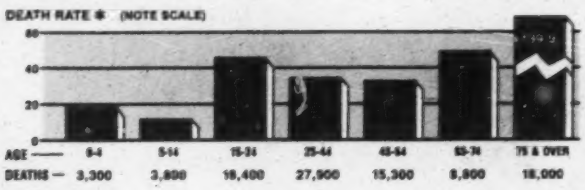
Work-motor-vehicle duplication. The cost of motor-vehicle accidents that involve persons in the course of their work is included in both classes but is eliminated from the total. The duplication in 1990 amounted to $15.9 billion and was made up of $2.3 billion in wage losses, $0.6 billion in medical expenses, $4.2 billion in insurance administration costs, $1.7 billion in vehicle damage, and $7.1 billion in uninsured work loss.

See source and footnotes on page 2.

How people died accidentally in 1990

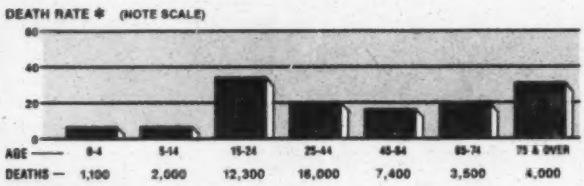
Type of accident and age of victim

	Death Total	Change from 1989	Death Rate*
All accidents	**93,500**	**-2%**	**37.5**



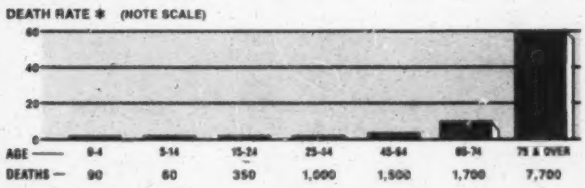
The term "accidents" covers most deaths from injury and poisoning. Excluded are homicides, suicides, deaths for which none of these categories can be determined, and war deaths.

Motor-vehicle accidents	**46,300**	**-2%**	**18.6**



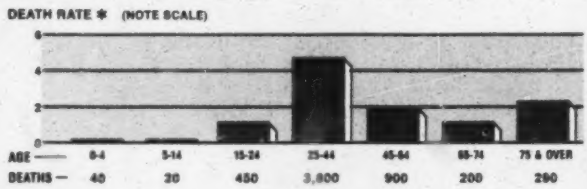
Includes deaths involving mechanically or electrically powered highway-transport vehicles in motion (except those on rails), both on and off the highway or street.

Falls	**12,400**	**+1%**	**5.0**



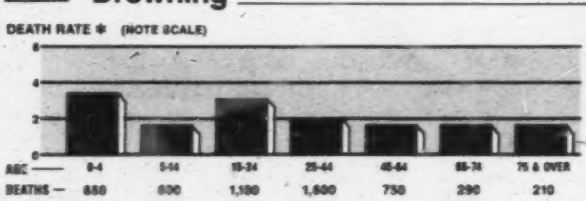
Includes deaths from falls from one level to another or on the same level. Excludes falls in or from transport vehicles, or while boarding or alighting from them.

Poisoning by solids and liquids	**5,700**	**-2%**	**2.3**



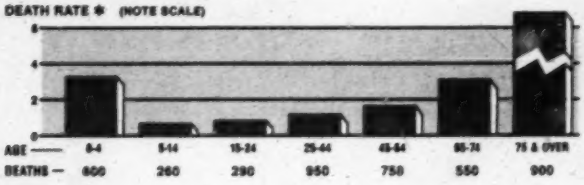
Includes deaths from drugs, medicines, mushrooms and shellfish, as well as commonly recognized poisons. Excludes poisonings from spoiled foods, salmonella, etc., which are classified as disease deaths.

Drowning	**5,200**	**+4%**	**2.1**



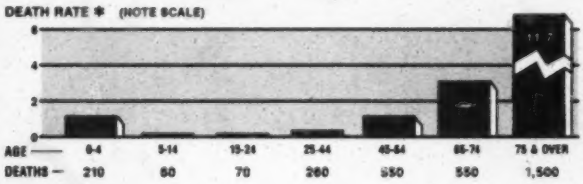
Includes all drownings (work and nonwork) in boat accidents and those resulting from swimming, playing in the water, or falling in. Excludes drownings in floods and other cataclysms.

	Death Total	Change from 1989	Death Rate*
Fires, burns, and deaths associated with fires	4,300	- 9%	1.7



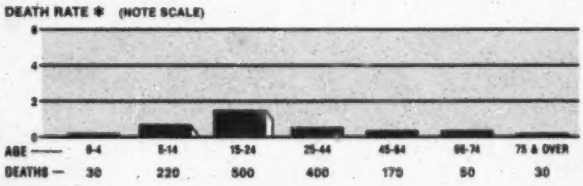
Includes death from fires, burns, and from injuries in conflagrations—such as asphyxiation, falls, and struck by falling objects. Excludes burns from hot objects or liquids.

Suffocation by ingested object	3,200	-14%	1.3



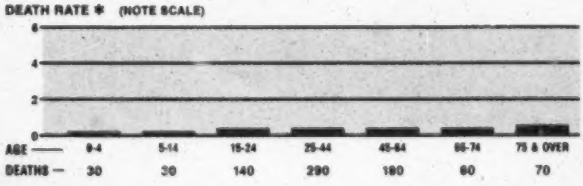
Includes deaths from accidental ingestion or inhalation of objects or food resulting in the obstruction of respiratory passages.

Firearms	1,400	-13%	0.6



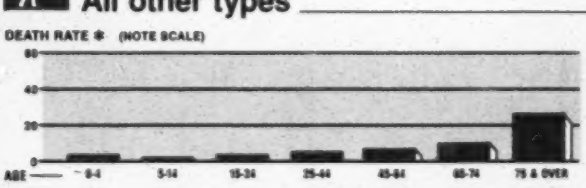
Includes deaths in firearms accidents principally in recreational activities or on home premises. Excludes deaths from explosive material or in war operations.

Poisoning by gases and vapors	800	-11%	0.3



Mostly carbon monoxide due to incomplete combustion, involving cooking and heating equipment and standing motor vehicles. Excludes deaths in conflagrations, or associated with transport vehicles in motion.

All other types	14,200	- 1%	5.7



Most important types included are: medical complications, machinery, air transport, mechanical suffocation, and excessive cold.

*Deaths per 100,000 population in each age group.

*Deaths per 100,000 population.

Accidents versus other causes of death

Accidents are the leading cause of death among all persons aged 1 to 37. Among persons of all ages, accidents are the fourth leading cause of death. For youths 15 to 24 years old, accidents claim about three times more lives than the next leading cause of death. More than three out of four accident victims in this age group are males.

Deaths and Death Rates by Age and Sex, 1988

Cause	Number of Deaths			Death Rates[a]		
	Total	Male	Female	Total	Male	Female
All Ages						
All Causes	**2,167,999**	**1,125,540**	**1,042,459**	**882.1**	**940.1**	**827.0**
Heart disease	765,156	385,402	379,754	311.3	321.9	301.2
Cancer	485,048	258,088	226,960	197.3	215.6	180.0
Stroke (cerebrovascular disease)	150,517	59,759	90,758	61.2	49.9	72.0
Accidents	**97,100**	**65,821**	**31,279**	**39.5**	**55.0**	**24.8**
Motor-vehicle	49,078	34,258	14,820	20.0	28.6	11.8
Falls	12,096	6,303	5,793	4.9	5.3	4.6
Poison (solid, liquid)	5,353	3,811	1,542	2.2	3.2	1.2
Drowning	4,966	4,053	913	2.0	3.4	0.7
Fires, burns	4,965	3,067	1,898	2.0	2.6	1.5
Chronic obstructive pulmonary disease	82,853	48,939	33,914	33.7	40.9	26.9
Pneumonia	77,662	36,834	40,828	31.6	30.8	32.4
Diabetes mellitus	40,368	16,975	23,393	16.4	14.2	18.6
Suicide	30,407	24,078	6,329	12.4	20.1	5.0
Chronic liver disease, cirrhosis	26,409	17,196	9,213	10.7	14.4	7.3
Nephritis and nephrosis	22,392	10,880	11,512	9.1	9.1	9.1
Atherosclerosis	22,086	8,327	13,759	9.0	7.0	10.9
Homicide	22,032	16,712	5,320	9.0	14.0	4.2
Septicemia	20,925	9,132	11,793	8.5	7.6	9.4
Certain conditions originating in perinatal period	18,220	10,393	7,827	7.4	8.7	6.2
Human immunodeficiency virus infection	16,602	14,811	1,791	6.8	12.4	1.4
Under 1 Year						
All Causes	**38,910**	**22,007**	**16,903**	**1,011.4**	**1,118.2**	**899.6**
Certain conditions originating in perinatal period	18,036	10,280	7,756	468.8	522.4	412.8
Congenital anomalies	8,141	4,384	3,757	211.6	222.8	199.9
Sudden infant death syndrome	5,476	3,295	2,181	142.3	167.4	116.1
Accidents	**936**	**530**	**406**	**24.3**	**26.9**	**21.6**
Motor-vehicle	215	118	97	5.6	6.0	5.2
Mechanical suffocation	198	111	87	5.1	5.6	4.6
Ingestion of food, object	145	89	56	3.8	4.5	3.0
Fires, burns	120	62	58	3.1	3.2	3.1
Drowning	88	51	37	2.3	2.6	2.0
Heart disease	871	486	385	22.6	24.7	20.5
Pneumonia	641	381	260	16.7	19.4	13.8
Homicide	315	151	164	8.2	7.7	8.7
1 to 4 Years						
All Causes	**7,429**	**4,221**	**3,208**	**50.9**	**56.5**	**45.0**
Accidents	**2,858**	**1,726**	**1,130**	**19.6**	**23.1**	**15.9**
Motor-vehicle	1,005	543	462	6.9	7.3	6.5
Fires, burns	651	395	256	4.5	5.3	3.6
Drowning	620	424	196	4.3	5.7	2.8
Ingestion of food, object	94	48	46	0.6	0.6	0.6
Mechanical suffocation	68	45	23	0.5	0.6	0.3
Congenital anomalies	913	511	402	6.3	6.8	5.6
Cancer	542	281	261	3.7	3.8	3.7
5 to 14 Years						
All Causes	**8,925**	**5,481**	**3,444**	**25.8**	**30.9**	**20.4**
Accidents	**4,215**	**2,792**	**1,423**	**12.2**	**15.7**	**8.4**
Motor-vehicle	2,423	1,538	885	7.0	8.7	5.2
Drowning	519	381	138	1.5	2.1	0.8
Fires, burns	420	225	195	1.2	1.3	1.2
Firearms	236	200	36	0.7	1.1	0.2
Mechanical suffocation	103	91	12	0.3	0.5	0.1
Cancer	1,096	644	452	3.2	3.6	2.7
Congenital anomalies	499	286	213	1.4	1.6	1.3

See footnotes on page 7.

Deaths and Death Rates by Age and Sex, 1988, Cont.

Cause	Number of Deaths			Death Rates[a]		
	Total	Male	Female	Total	Male	Female
15 to 24 Years						
All Causes	**38,167**	**28,531**	**9,636**	**102.1**	**151.0**	**52.1**
Accidents	**18,507**	**14,195**	**4,312**	**49.5**	**75.1**	**23.3**
Motor-vehicle	14,406	10,689	3,717	38.5	56.6	20.1
Drowning	1,019	922	97	2.7	4.9	0.5
Firearms	466	437	29	1.2	2.3	0.2
Poison (solid, liquid)	462	344	118	1.2	1.8	0.6
Fires, burns	355	244	111	0.9	1.3	0.6
Homicide	5,771	4,668	1,103	15.4	24.7	6.0
Suicide	4,929	4,143	786	13.2	21.9	4.2
25 to 44 Years						
All Causes	**136,591**	**95,419**	**41,172**	**173.0**	**243.1**	**103.7**
Accidents	**28,279**	**21,973**	**6,306**	**35.8**	**56.0**	**15.9**
Motor-vehicle	16,580	12,396	4,184	21.0	31.6	10.5
Poison (solid, liquid)	3,344	2,620	724	4.2	6.7	1.8
Drowning	1,538	1,362	176	1.9	3.5	0.4
Falls	1,068	901	167	1.4	2.3	0.4
Fires, burns	996	704	292	1.3	1.8	0.7
Cancer	20,792	9,472	11,320	26.3	24.1	28.5
Heart disease	15,645	11,537	4,108	19.8	29.4	10.4
Human immunodeficiency virus infection	12,220	10,935	1,285	15.5	27.9	3.2
45 to 64 Years						
All Causes	**387,221**	**239,283**	**147,938**	**841.9**	**1,085.5**	**617.6**
Cancer	136,422	73,746	62,676	296.6	334.6	261.7
Heart disease	119,272	83,653	35,619	259.3	379.5	148.7
Stroke (cerebrovascular disease)	15,826	8,588	7,238	34.4	39.0	30.2
Accidents	**15,177**	**10,793**	**4,384**	**33.0**	**49.0**	**18.3**
Motor-vehicle	7,245	4,857	2,388	15.8	22.0	10.0
Falls	1,478	1,136	342	3.2	5.2	1.4
Fires, burns	924	620	304	2.0	2.8	1.3
Poison (solid, liquid)	826	527	299	1.8	2.4	1.2
Drowning	638	533	105	1.4	2.4	0.4
Chronic obstructive pulmonary disease	12,918	7,365	5,553	28.1	33.4	23.2
Chronic liver disease, cirrhosis	11,760	8,116	3,644	25.6	36.8	15.2
65 to 74 Years						
All Causes	**488,545**	**283,901**	**204,644**	**2,728.4**	**3,571.5**	**2,055.3**
Heart disease	176,126	107,888	68,238	983.6	1,357.3	685.3
Cancer	150,824	85,216	65,608	842.3	1,072.0	658.9
Stroke (cerebrovascular disease)	27,694	14,024	13,670	154.7	176.4	137.3
Chronic obstructive pulmonary disease	27,185	16,360	10,825	151.8	205.8	108.7
Diabetes mellitus	11,092	4,912	6,180	61.9	61.8	62.1
Pneumonia	10,713	6,550	4,163	59.8	82.4	41.8
Accidents	**8,971**	**5,449**	**3,522**	**50.1**	**68.5**	**35.4**
Motor-vehicle	3,429	2,024	1,405	19.2	25.5	14.1
Falls	1,657	991	666	9.3	12.5	6.7
Surgical, medical complications	718	377	341	4.0	4.7	3.4
Ingestion of food, object	678	392	286	3.8	4.9	2.9
Fires, burns	598	351	247	3.3	4.4	2.5
75 Years and Over						
All Causes	**1,062,211**	**446,697**	**615,514**	**8,518.8**	**10,136.1**	**7,634.8**
Heart disease	451,476	180,758	270,718	3,620.8	4,101.6	3,358.0
Cancer	173,389	87,571	85,818	1,390.6	1,987.1	1,064.5
Stroke (cerebrovascular disease)	103,060	35,029	68,031	826.5	794.8	843.8
Pneumonia	57,641	24,420	33,221	462.3	554.1	412.1
Chronic obstructive pulmonary disease	41,440	24,508	16,932	332.3	556.1	210.0
Diabetes mellitus	18,455	6,453	12,002	148.0	146.4	148.9
Atherosclerosis	18,359	6,109	12,250	147.2	138.6	151.9
Accidents	**18,157**	**8,361**	**9,796**	**145.6**	**189.7**	**121.5**
Falls	7,409	2,884	4,525	59.4	65.4	56.1
Motor-vehicle	3,775	2,093	1,682	30.3	47.5	20.9
Ingestion of food, object	1,883	817	1,066	15.1	18.5	13.2
Surgical, medical complications	1,304	551	753	10.5	12.5	9.3
Fires, burns	901	466	435	7.2	10.6	5.4

Source: Deaths are latest figures from National Center for Health Statistics. Rates are National Safety Council calculations. The all causes and accident totals for each age group include deaths not shown separately.
[a]Deaths per 100,000 population in each age group.

Leading causes of death by age, 1988

Heart disease, cancer, stroke and accidents were the leading causes of death in the United States in 1988. This graph depicts the number of deaths attributed to these causes by single-year ages.

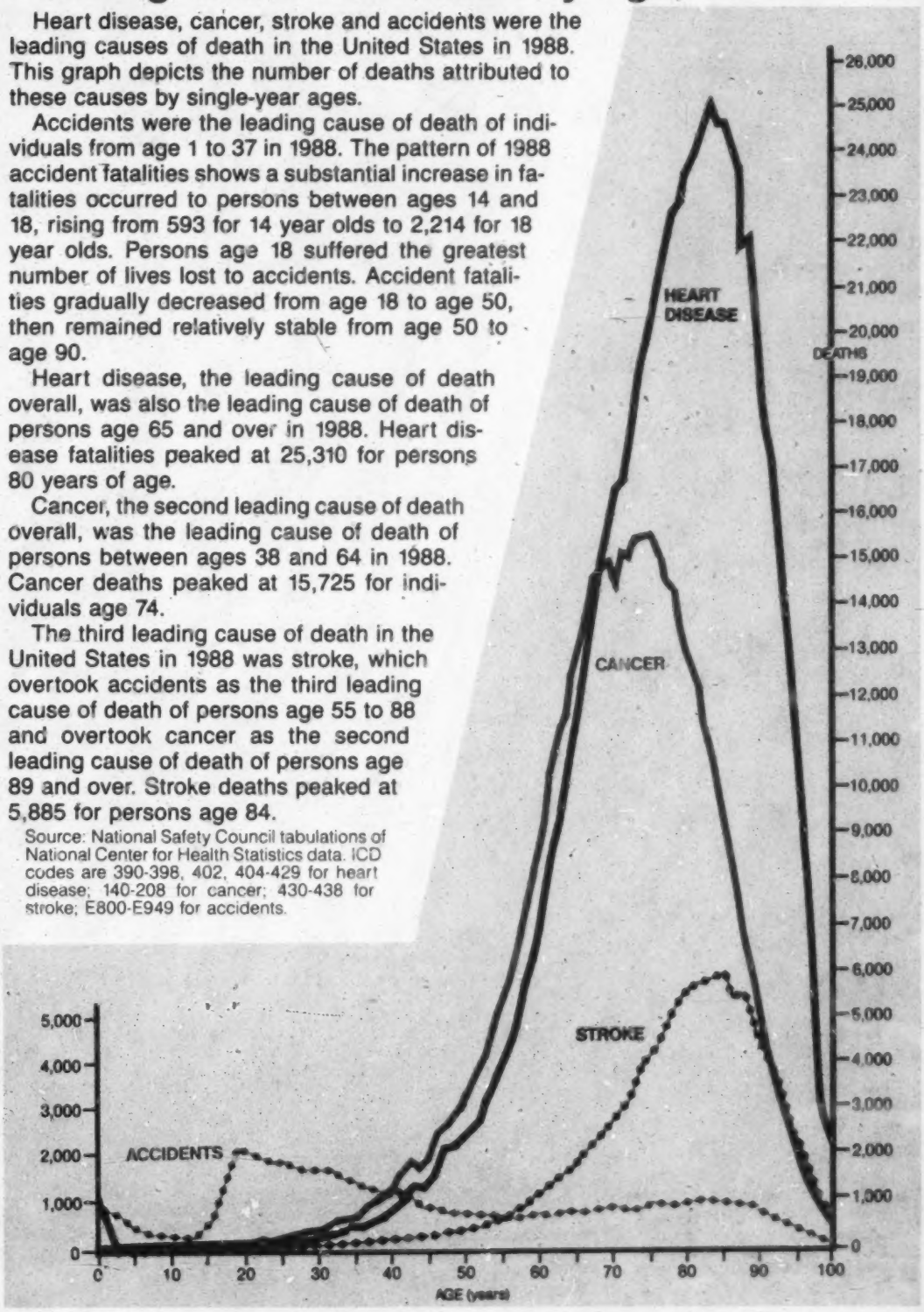
Accidents were the leading cause of death of individuals from age 1 to 37 in 1988. The pattern of 1988 accident fatalities shows a substantial increase in fatalities occurred to persons between ages 14 and 18, rising from 593 for 14 year olds to 2,214 for 18 year olds. Persons age 18 suffered the greatest number of lives lost to accidents. Accident fatalities gradually decreased from age 18 to age 50, then remained relatively stable from age 50 to age 90.

Heart disease, the leading cause of death overall, was also the leading cause of death of persons age 65 and over in 1988. Heart disease fatalities peaked at 25,310 for persons 80 years of age.

Cancer, the second leading cause of death overall, was the leading cause of death of persons between ages 38 and 64 in 1988. Cancer deaths peaked at 15,725 for individuals age 74.

The third leading cause of death in the United States in 1988 was stroke, which overtook accidents as the third leading cause of death of persons age 55 to 88 and overtook cancer as the second leading cause of death of persons age 89 and over. Stroke deaths peaked at 5,885 for persons age 84.

Source: National Safety Council tabulations of National Center for Health Statistics data. ICD codes are 390-398, 402, 404-429 for heart disease; 140-208 for cancer; 430-438 for stroke; E800-E949 for accidents.



Leading causes of accidental death by age

Motor-vehicle accidents, falls, poisoning by solids and liquids, and fires and burns were the leading causes of accidental death in the United States in 1988. This graph depicts the number of deaths attributed to these causes by single-year ages in that year.

Motor-vehicle accidents were the leading cause of accidental death overall and the leading cause of accidental death from birth to age 78 in 1988. The distribution of 1988 motor-vehicle fatalities shows a sharp increase for persons age 13 to 18, rising from 237 for 13 year olds to 1,834 for 18 year olds. The greatest number of motor-vehicle fatalities occurred to persons age 18 in 1988.

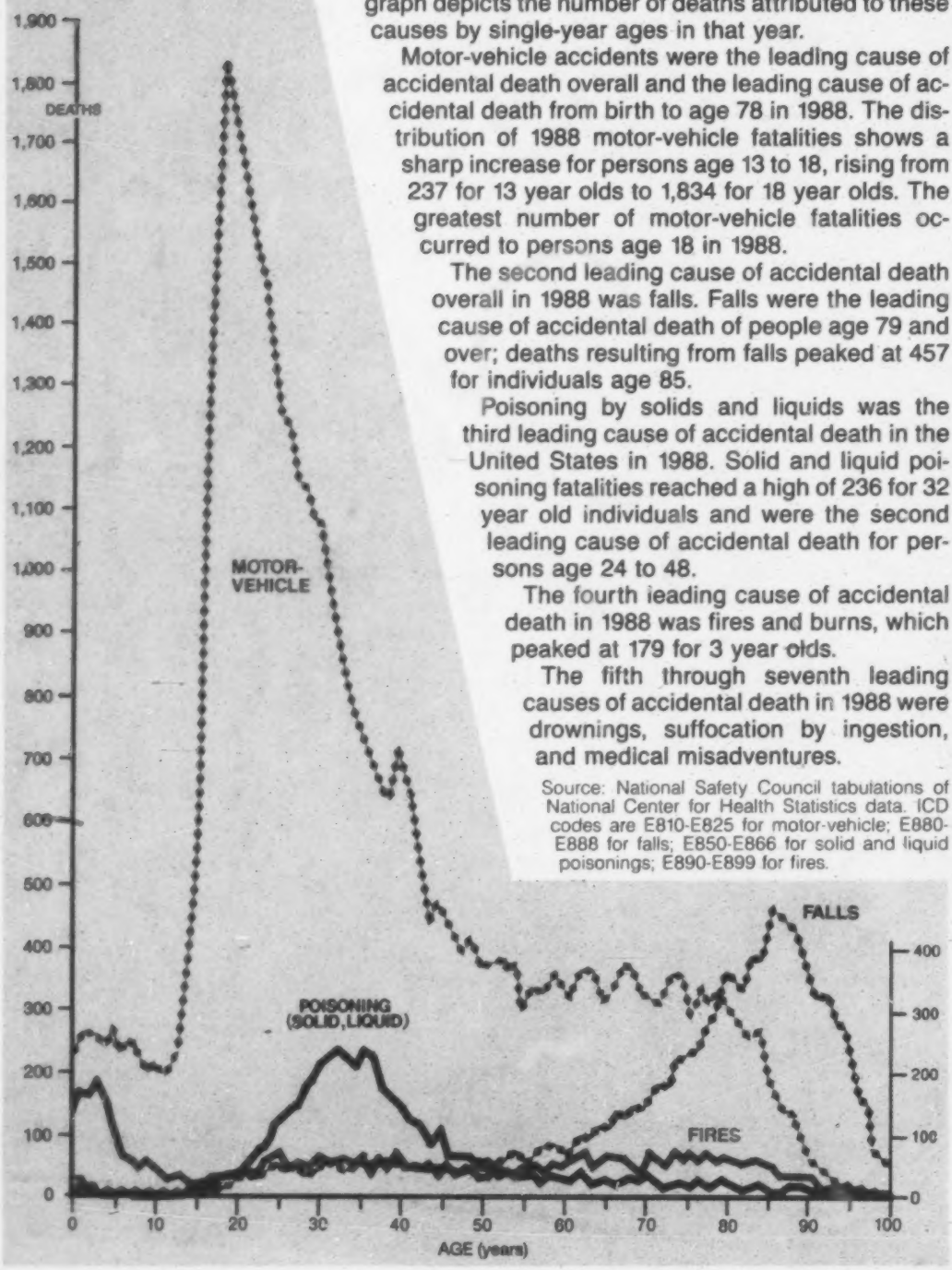
The second leading cause of accidental death overall in 1988 was falls. Falls were the leading cause of accidental death of people age 79 and over; deaths resulting from falls peaked at 457 for individuals age 85.

Poisoning by solids and liquids was the third leading cause of accidental death in the United States in 1988. Solid and liquid poisoning fatalities reached a high of 236 for 32 year old individuals and were the second leading cause of accidental death for persons age 24 to 48.

The fourth leading cause of accidental death in 1988 was fires and burns, which peaked at 179 for 3 year olds.

The fifth through seventh leading causes of accidental death in 1988 were drownings, suffocation by ingestion, and medical misadventures.

Source: National Safety Council tabulations of National Center for Health Statistics data. ICD codes are E810-E825 for motor-vehicle; E880-E888 for falls; E850-E866 for solid and liquid poisonings; E890-E899 for fires.



All Deaths Due to Injury

Type of Accident or Manner of Injury	1988[a]	1987	1986
TOTAL DEATHS DUE TO INJURIES, E800-E999[b]	**152,572**	**149,942**	**151,032**
All Accidental Deaths, E800-E949	**97,100**	**95,020**	**95,277**
Transport accidents, E800-E848	**51,855**	**51,368**	**50,925**
Railway, E800-E807	571	624	556
Motor-vehicle, E810-E825	49,078	48,290	47,865
Other road vehicle, E826-E829	191	231	234
Water transport, E830-E838	979	949	1,102
Drowning (excluded from drowning below), E830, E832	*767*	*740*	*923*
Other water transport, E831, E833-E838	*212*	*209*	*179*
Air and space transport, E840-E845	1,012	1,263	1,148
Vehicle accidents not elsewhere classifiable, E846-E848	24	31	20
Poisoning by solids and liquids (See also page 98), E850-E866	**5,353**	**4,415**	**4,731**
Drugs, medicaments and biologicals, E850-E858	4,865	3,907	4,187
Analgesics, antipyretics, and antirheumatics, E850	*1,190*	*937*	*1,279*
Barbiturates, E851	*29*	*30*	*49*
Other sedatives and hypnotics, E852	*30*	*29*	*30*
Tranquilizers, E853	*83*	*63*	*92*
Other psychotropic agents, E854	*229*	*165*	*205*
Other drugs acting on central and autonomic nervous system, E855	*1,181*	*852*	*685*
Antibiotics, E856	*60*	*59*	*63*
Anti-infectives, E857	*2*	*7*	*6*
Other drugs, E858	*2,061*	*1,765*	*1,778*
Poisoning by other solids and liquids, E860-E866	488	508	544
Alcohol, E860	*334*	*347*	*352*
Cleansing, polishing agents, disinfectants, paints, varnishes, E861	*14*	*11*	*6*
Petroleum products, other solvents and their vapors, E862	*58*	*70*	*84*
Agricultural, horticultural chemical, pharmaceutical preparations, E863	*14*	*13*	*20*
Corrosives and caustics, E864	*12*	*10*	*17*
Foodstuffs and poisonous plants, E865	*3*	*9*	*6*
Other and unspecified solids and liquids, E866	*53*	*48*	*59*
Poisoning by gases and vapors (See also page 98), E867-E869	**873**	**900**	**1,009**
Gas distributed by pipeline, E867	36	53	29
Other utility gas and other carbon monoxide, E868	686	690	816
Motor-vehicle exhaust gas, E868.2	*372*	*402*	*475*
Others, not motor-vehicle exhaust gas, E868.0, E868.1, E868.3-E868.9	*314*	*288*	*341*
Other gases and vapors, E869	151	157	164
Complications, misadventures of surgical, medical care, E870-E879	**2,858**	**2,881**	**2,873**
Falls, E880-E888	**12,096**	**11,733**	**11,444**
Fall on or from stairs or steps, E880	1,093	1,135	1,137
Fall on or from ladders or scaffolding, E881	364	354	325
Fall from or out of building or other structure, E882	672	685	650
Fall into hole or other opening in surface, E883	99	100	119
Other fall from one level to another, E884	1,089	1,088	1,003
Fall on same level from slipping, tripping or stumbling, E885	426	400	389
Fall on same level from collision, pushing or shoving, E886	7	4	5
Fracture, cause unspecified, E887	2,900	2,780	2,707
Other and unspecified fall, E888	5,446	5,187	5,109
Fire and flames, E890-E899	**4,965**	**4,710**	**4,835**
Conflagration, E890-E892	4,280	4,083	4,175
Ignition of clothing, E893	205	200	179
Ignition of highly inflammable material, E894	75	55	56
Other and unspecified fire and flames, E895-E899	405	372	425
Natural and environmental factors, E900-E909	**1,798**	**1,527**	**1,501**
Excessive heat, E900	454	338	364
Excessive cold, E901	846	631	619
Hunger, thirst, exposure and neglect, E904	199	169	207
Poisoning by and toxic reaction to venomous animals, plants, E905	48	68	63
Venomous snakes, lizards, and spiders, E905.0, E905.1	*4*	*11*	*13*
Hornets, wasps and bees, E905.3	*34*	*53*	*42*
Other and unspecified animals, plants, E905.2, E905.4-E905.9	*10*	*4*	*8*
Other injury caused by animals, E906	89	97	93
Dog bite, E906.0	*16*	*12*	*15*
Other and unspecified injury by animal, E906.1-E906.9	*73*	*85*	*78*
Lightning, E907	82	99	78
Cataclysmic storms, and floods resulting from storms, E908	59	91	58
Cataclysmic earth surface movements and eruptions, E909	7	25	12
Other natural and environmental factors, E902, E903	14	9	7
Other accidents, E910-E928	**16,359**	**16,573**	**17,099**
Drowning, submersion (excluding water transport drownings above), E910	4,199	4,360	4,777
During sport or recreation, E910.0-E910.2	*890*	*981*	*1,219*
In bathtub, E910.4	*364*	*348*	*343*
Other, unspecified drowning, submersion, E910.3, E910.8, E910.9	*2,945*	*3,031*	*3,215*
Inhalation and ingestion of food, E911	1,575	1,569	1,709
Inhalation and ingestion of other object, E912	2,230	2,119	1,983

See source and footnotes on page 11.

All Deaths Due to Injury, Cont.

Type of Accident or Manner of Injury	1988[a]	1987	1986
Mechanical suffocation, E913	956	1,009	941
In bed or cradle, E913.0	*172*	*198*	*172*
By plastic bag, E913.1	*51*	*41*	*48*
Due to lack of air (in refrigerator, other enclosed space), E913.2	*28*	*21*	*31*
By falling earth (noncataclysmic cave-in), E913.3	*106*	*121*	*114*
Other and unspecified mechanical suffocation, E913.8, E913.9	*599*	*628*	*576*
Struck by falling object, E916	835	902	888
Struck against or by objects or persons, E917	239	193	243
Caught in or between objects, E918	133	122	112
Machinery, E919	1,176	1,253	1,202
Agricultural machines, E919.0	*599*	*643*	*649*
Lifting machines and appliances, E919.2	*180*	*192*	*185*
Earth moving, scraping and other excavating machines, E919.7	*115*	*138*	*116*
Other, unspecified machinery, E919.1, E919.3-E919.6, E919.8, E919.9	*282*	*280*	*252*
Cutting or piercing instruments or objects, E920	119	87	118
Firearm missile, E922	1,501	1,440	1,452
Handgun, E922.0	*202*	*206*	*183*
Shotgun (automatic), E922.1	*185*	*178*	*190*
Hunting rifle, E922.2	*93*	*105*	*108*
Other and unspecified firearm missile, E922.3-E922.9	*1,021*	*951*	*971*
Explosive material, E923	193	215	242
Fireworks, E923.0	*4*	*5*	*8*
Explosive gases, E923.2	*67*	*108*	*110*
Other and unspecified explosive material, E923.1, E923.8, E923.9	*122*	*103*	*118*
Hot substance or object, corrosive material and steam, E924	122	137	134
Electric current, E925	714	760	854
Domestic wiring and appliances, E925.0	*122*	*121*	*150*
Generating plants, distribution stations, transmission lines, E925.1	*165*	*177*	*182*
Industrial wiring, appliances and electrical machinery, E925.2	*75*	*64*	*89*
Other and unspecified electric current, E925.8, E925.9	*352*	*398*	*433*
Radiation, E926	0	0	0
Other and unspecified, E914, E915, E921, E927, E928	2,367	2,406	2,444
Late effects (deaths more than one year after accident), E929	**763**	**742**	**664**
Adverse effects of drugs in therapeutic use, E930-E949	**180**	**151**	**196**
All Suicide Deaths, E950-E959	**30,407**	**30,796**	**30,904**
Poisoning by solid and liquid, E950	3,133	3,106	3,070
Poisoning by gases and vapors, E951, E952	2,692	3,215	2,966
Motor-vehicle exhaust gas, E952.0	*2,247*	*2,684*	*2,450*
Other and unspecified gases and vapors, E951, E952.1-E952.9	*445*	*531*	*516*
Hanging, strangulation and suffocation, E953	4,375	4,235	4,606
Drowning, E954	401	454	493
Firearms, E955.0-E955.4	18,169	18,136	18,153
Handgun, E955.0	*3,197*	*3,295*	*3,319*
Shotgun, E955.1	*2,341*	*2,461*	*2,365*
Hunting rifle, E955.2	*1,100*	*1,114*	*1,146*
Other and unspecified firearm, E955.3, E955.4	*11,531*	*11,266*	*11,323*
Cutting and piercing instruments, E956	461	433	432
Jumping from high places, E957	625	642	680
Other, unspecified suicide and late effects, E955.5, E955.9, E958, E959	551	575	504
All Homicide Deaths, E960-E969	**21,784**	**20,812**	**21,462**
Assault by hanging and strangulation, E963	928	1,015	1,006
Assault by firearm, E965.0-E965.4	13,645	12,657	13,029
Handgun, E965.0	*1,055*	*1,041*	*1,088*
Shotgun, E965.1	*1,136*	*1,079*	*1,230*
Hunting rifle, E965.2	*241*	*202*	*198*
Other and unspecified firearm, E965.3, E965.4	*11,213*	*10,335*	*10,513*
Assault by cutting and piercing instrument, E966	3,939	4,099	4,342
Child battering and other maltreatment, E967	232	202	215
Other, unspecified assault and late effects, E960-E962, E964, E965.5-E965.9, E968, E969	3,040	2,839	2,870
Legal Intervention, E970-E978	**248**	**291**	**269**
Undetermined Whether Accidentally or Purposely Inflicted, E980-E989	**3,018**	**3,011**	**3,108**
Poisoning by solid and liquid, E980	1,285	1,146	1,033
Poisoning by gases and vapors, E981, E982	148	169	190
Motor-vehicle exhaust gas, E982.0	*101*	*102*	*122*
Other and unspecified gases and vapors, E981, E982.1-E982.9	*47*	*67*	*68*
Drowning, E984	281	346	323
Firearms, E985.0-E985.4	442	405	492
Other, unspecified undetermined deaths and late effects, E983, E985.5-E989	862	945	1,070
Deaths From Operations of War, E990-E999	**15**	**12**	**12**

Source: National Center for Health Statistics. Deaths are classified on the basis of the Ninth Revision of "The International Classification of Diseases" (ICD), which became effective in 1979.

[a]Latest official figures.

[b]Numbers following titles refer to External Cause of Injury and Poisoning classifications in the ICD.

Accidental Deaths by Age, Sex, and Type, 1988[a]

Age and Sex	All Types[b]	Motor-Vehicle	Falls	Drowning[c]	Fires, Burns[d]	Ingest. of Food, Object	Fire-arms	Poison (solid, liquid)	Poison by Gas	% Male All Types
All Ages	**97,100**	**49,078**	**12,096**	**4,966**	**4,965**	**3,805**	**1,501**	**5,353**	**873**	**68%**
Under 5	3,794	1,220	104	708	771	239	41	42	36	60%
5 to 14	4,215	2,423	58	519	420	49	236	24	29	66%
15 to 24	18,507	14,406	322	1,019	355	73	466	462	154	77%
25 to 44	28,279	16,580	1,068	1,538	996	285	477	3,344	319	78%
45 to 64	15,177	7,245	1,478	638	924	598	174	826	183	71%
65 to 74	8,971	3,429	1,657	250	598	678	61	275	57	61%
75 & over	18,157	3,775	7,409	294	901	1,883	46	380	95	46%
Male	**65,821**	**34,258**	**6,303**	**4,053**	**3,067**	**1,992**	**1,304**	**3,811**	**650**	
Female	**31,279**	**14,820**	**5,793**	**913**	**1,898**	**1,813**	**197**	**1,542**	**223**	
Per cent male	68%	70%	52%	82%	62%	52%	87%	71%	74%	

Accidental Deaths by Month and Type, 1988 and 1990

Month	1990 Totals	1988[a] Details by Type: All Types[b]	Motor-Vehicle	Falls	Drowning[c, e]	Fires, Burns[d]	Ingest. of Food, Object	Fire-arms	Poison (solid, liquid)	Poison by Gas
All Months	**93,500**	**97,100**	**49,078**	**12,096**	**4,966**	**4,965**	**3,805**	**1,501**	**5,353**	**873**
January	7,800	7,798	3,382	1,146	190	735	368	113	424	138
February	6,800	6,839	3,129	1,001	196	549	313	107	373	92
March	7,450	7,646	3,595	1,093	270	547	342	113	448	98
April	7,550	7,579	3,808	945	360	386	306	108	475	48
May	7,750	8,139	4,220	973	560	341	295	100	431	36
June	8,350	8,442	4,319	958	810	275	323	122	411	55
July	9,000	9,127	4,639	956	920	252	302	107	513	46
August	8,500	8,955	4,683	992	700	213	287	133	488	35
September	7,850	7,961	4,345	984	350	236	274	101	464	40
October	7,500	8,390	4,567	1,011	250	362	302	151	450	76
November	7,350	7,744	4,005	982	210	443	334	184	422	75
December	7,600	8,480	4,386	1,055	150	626	359	162	454	134
Average	**7,790**	**8,092**	**4,090**	**1,008**	**414**	**414**	**317**	**125**	**446**	**73**

Source: National Center for Health Statistics and National Safety Council. [a]Latest official figures.
[b]Includes some deaths not shown separately. [c]Includes drowning in water transport accidents.
[d]Includes deaths resulting from conflagration regardless of nature of injury. [e]Partly estimated.

Injury definitions

National Health Interview Survey definitions. The National Health Interview Survey (NHIS) figures on the next page and noted elsewhere in *Accident Facts* include injuries due to nonaccidental violence as well as accidental injuries. An injury is included in the NHIS totals if (1) it is *medically attended* or (2) it causes one-half day or more of *restricted activity.* A *medically attended* injury is one for which a physician has been consulted (in person or by telephone) for examination, diagnosis, treatment or advice. *Restricted activity* is defined as one or more of the following types: bed day (person stayed in bed more than half a day); work-loss day (person missed more than half a day from a job or business); school-loss day (currently enrolled 5-17 year old student missed more than half a day of school); cut down day (person cuts down for more than half a day on the things he or she usually does).

National Safety Council definition of injury. A disabling injury is defined as one which results in death, some degree of permanent impairment, or renders the injured person unable to effectively perform his regular duties or activities for a full day beyond the day of the injury. This definition applies to all categories of accidents. All injury totals labeled "disabling injuries" in *Accident Facts* are based on this definition. Some *rates* in the Work section are based on OSHA definitions of recordable cases (see page 43).

Numerical differences between National Health Interview Survey totals on page 13 and the National Safety Council totals on page 1 are due mainly to differences in the injury definitions used.

The National Health Interview Survey

The National Health Interview Survey, conducted by the U.S. Public Health Service, is a continuous sample of households to record health data including the injuries which members of the households experienced during the two weeks prior to the interview. Of the nation's 92,800,000 households in 1989, approximately 46,000 were interviewed. The questionnaire and data preparation procedures of the survey were extensively revised in 1982, and comparison with earlier results should be made with caution.

See page 12 for definitions.

Estimated Number of Episodes of Persons Injured, Restricted Activity Days and Bed Days, 1989

Class or Place	Persons Injured		Restricted Activity Days		Bed Days	
	Number	Rate[a]	Number	Rate[a]	Number	Rate[a]
All episodes:[b]	**57,999,000**	**23.8**	**629,962,000**	**258.7**	**192,116,000**	**78.9**
Moving motor vehicle:	**5,353,000**	**2.2**	**122,748,000**	**50.4**	**37,946,000**	**15.6**
Traffic	*4,648,000*	*1.9*	*105,451,000*	*43.3*	*33,230,000*	*13.6*
Work:[c]	**10,947,000**	**6.1**	**191,544,000**	**106.7**	**50,851,000**	**28.3**
Place of accident:						
Home[c]	17,569,000	7.2	160,895,000	66.1	57,463,000	23.6
Street, highway	8,258,000	3.4	138,357,000	56.8	44,313,000	18.2
Industrial place[c]	8,283,000	3.4	150,209,000	61.7	39,676,000	16.3
Other	14,247,000	5.9	124,174,000	51.0	27,331,000	11.2

Source: National Center for Health Statistics, P. F. Adams and V. Benson: Current estimates from the National Health Interview Survey, United States, 1989. *Vital and Health Statistics*, Series 10, No. 176. DHHS Pub. No. (PHS) 90-1504. Public Health Service. Washington. U.S. Government Printing Office, Oct. 1990.

[a]Per 100 persons per year.

[b]Estimates are calculated for three separate characteristics: whether in a moving motor vehicle, whether at work, and by place of accident. The "all episodes" estimate includes cases unclassified for one or more of these characteristics. For this reason, and because there is duplication among categories, individual estimates do not add to the "all episodes" total.

[c]Work includes employed persons 18 years of age and over only. Home includes yard, buildings, and sidewalks on the property as well as inside the house. Industrial place does *not* include business or professional offices, farms or other nonindustrial work locations.

Number of Episodes of Persons Injured by Age, 1989

Class or Place	Average annual number of persons injured (in thousands)						
	All Ages	Under 5 Years	5-17 Years	18-24 Years	25-44 Years	45-64 Years	65 Years and Over
All episodes:[a]	**57,999**	**4,166**	**12,827**	**6,929**	**21,929**	**7,339**	**4,809**
Moving motor vehicle:	**5,353**	**208**	**974**	**1,215**	**2,125**	**581**	**250**
Traffic	*4,648*	*208*	*854*	*1,156*	*1,790*	*390*	*250*
Work:[c]	**10,947**	(b)	(b)	**1,471**	**7,930**	**1,381**	**166**
Place of accident:							
Home[c]	17,569	2,204	3,425	993	5,274	3,286	2,447
Street, highway	8,258	313	2,127	1,348	2,971	713	785
Industrial place[c]	8,283	48	139	1,402	5,895	749	50
Other	14,247	382	5,543	2,561	4,475	1,017	269

Source: National Center for Health Statistics, P. F. Adams and V. Benson: Current estimates from the National Health Interview Survey, United States, 1989. *Vital and Health Statistics*, Series 10, No. 176. DHHS Pub. No. (PHS) 90-1504. Public Health Service. Washington. U.S. Government Printing Office, Oct. 1990.

[a]Estimates are calculated for three separate characteristics: whether in a moving motor vehicle, whether at work, and by place of accident. The "all episodes" estimate includes cases unclassified for one or more of these characteristics. For this reason, and because there is duplication among categories, individual estimates do not add to the "all episodes" total.

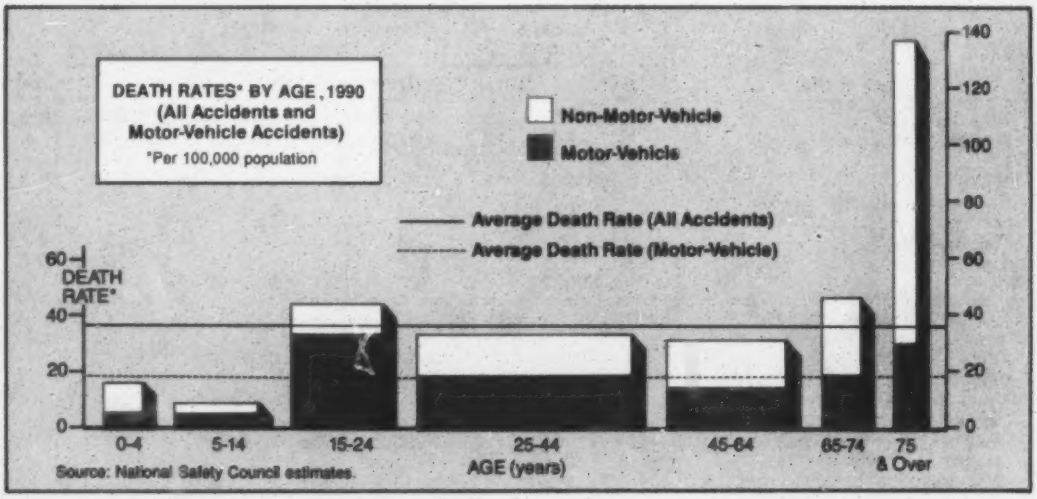
[b]Not available or not applicable.

[c]Work includes employed persons 18 years of age and over only. Home includes yard, buildings, and sidewalks on the property as well as inside the house. Industrial place does *not* include business or professional offices, farms or other nonindustrial work locations.

Accidental death rates by age

Accidental death rates per 100,000 population are published each year in *Accident Facts* for the entire population and for standard age groups. The amount that a particular age group contributes to the overall rate is determined by the magnitude of the group rate and the proportion of the population represented by the group. For example, although the death rate for those aged 75 and over is almost 3 times higher than any other age group, this group also represents the smallest proportion of the population.

The chart below illustrates for each age group, the two factors which determine its contribution to the overall rate. Height of the bars represents the magnitude of the death rate for the age group. Width of the bar represents its relative proportion of the total population. The motor-vehicle portion of the rate is shown in solid color.



Years of Potential Life Lost (YPLL)

While accidents are the fourth leading cause of death in the U.S., accident victims tend to be much younger than those for the three leading causes of death. Ranked by years of potential life lost before age 65, unintentional injuries (accidents) are the leading cause of death, accounting for about 2.2 million such years lost in each 12-month period. The next leading causes of years of potential life lost before age 65, in order, are cancer (1.9 million), suicide/homicide (1.4 million), and heart disease (1.4 million).

Including only the years before age 65 is the standard method used to calculate years of potential life lost. However, alternative methods include years before age 85 or total life expectancy remaining at time of death. Using both these alternative methods, the leading causes of years of potential life lost are, in order, heart disease, cancer, unintentional injuries, suicide/homicide, and cerebrovascular disease.

By type of accidental death, rankings based on years of potential life lost likewise tend to emphasize those types dominated by younger age groups. Motor-vehicle accidents are the leading cause of accidental deaths and also the leading cause of years of potential life lost before age 65 due to accidents. Falls, however, are the second leading cause of accidental death but fifth leading cause of years of potential life lost due to accidents. Other accident types and their rankings in terms of years of potential life lost before age 65 due to accidents are as follows: drownings (second), fires (third), poisonings (fourth), firearms (sixth), suffocation by ingestion (seventh).

Source: *Morbidity and Mortality Weekly Report* (35 [suppl. no. 1S], December 19, 1986, 3S; 36 [49], December 18, 1987, 814; 39 [2], January 19, 1990, 20–22; 40 [4], February 1, 1991, 60–62).

Major Disasters, 1990

Disasters are front-page news even though the lives lost in the United States are relatively few when compared to the day-to-day life losses from ordinary accidents. Listed below are the two major disasters taking 25 or more lives that occurred in the U.S. during 1990. The plane crash involved a foreign air carrier, and is therefore not reflected in the airline figures located on page 91.

Type and Location	No. of Deaths	Date of Disaster
Crash of scheduled plane in Cove Neck, New York	73	January 25, 1990
Tornado in Plainfield and Crest Hill, Illinois	29	August 28, 1990

Source: National Transportation Safety Board, National Weather Service.

Largest U.S. Disasters by Category

	Type and Location	No. of Deaths	Date of Disaster
Floods:	Galveston tidal wave	6,000	Sept. 8, 1900
	Johnstown, Pa.	2,209	May 31, 1889
	Ohio and Indiana	732	Mar. 28, 1913
	St. Francis, Calif., dam burst	450	Mar. 13, 1928
	Ohio and Mississippi River valleys	380	Jan. 22, 1937
Hurricanes:	Florida	1,833	Sept. 16-17, 1928
	New England	657	Sept. 21, 1938
	Louisiana	500	Sept. 29, 1915
	Florida	409	Sept. 1-2, 1935
	Louisiana and Texas	395	June 27-28, 1957
Tornadoes:	Illinois	606	Mar. 18, 1925
	Mississippi, Alabama, Georgia	402	Apr. 2-7, 1936
	Southern and Midwestern states	307	Apr. 3, 1974
	Ind., Ohio, Mich., Ill. and Wis.	272	Apr. 11, 1965
	Ark., Tenn., Mo., Miss. and Ala.	229	Mar. 21-22, 1952
Earthquakes:	San Francisco earthquake and fire	452	Apr. 18, 1906
	Alaskan earthquake-tsunami hit Hawaii, Calif.	173	Apr. 1, 1946
	Long Beach, Calif., earthquake	120	Mar. 10, 1933
	Alaskan earthquake and tsunami	117	Mar. 27, 1964
	San Fernando-Los Angeles, Calif., earthquake	64	Feb. 9, 1971
Marine:	"Sultana" exploded—Mississippi River	1,547	Apr. 27, 1865
	"General Slocum" burned—East River	1,030	June 15, 1904
	"Empress of Ireland" ship collision—St. Lawrence River	1,024	May 29, 1914
	"Eastland" capsized—Chicago River	812	July 24, 1915
	"Morro-Castle" burned—off New Jersey coast	135	Sept. 8, 1934
Aircraft:	Crash of scheduled plane near O'Hare Airport, Chicago	273	May 25, 1979
	Crash of scheduled plane, Detroit, Michigan	156	Aug. 16, 1987
	Crash of scheduled plane in Kenner, La.	154	July 9, 1982
	Two-plane collision over San Diego, Calif.	144	Sept. 25, 1978
	Crash of scheduled plane, Ft. Worth/Dallas Airport	135	Aug. 2, 1985
Railroad:	Two-train collision near Nashville, Tenn.	101	July 9, 1918
	Two-train collision, Eden, Colo.	96	Aug. 7, 1904
	Avalanche hit two trains near Wellington, Wash.	96	Mar. 1, 1910
	Bridge collapse under train, Ashtabula, Ohio	92	Dec. 29, 1876
	Rapid transit train derailment, Brooklyn, N.Y.	92	Nov. 1, 1918
Fires:	Peshtigo, Wis., and surrounding area forest fire	1,152	Oct. 9, 1871
	Iroquois Theatre, Chicago	603	Dec. 30, 1903
	Northeastern Minnesota, forest fire	559	Oct. 12, 1918
	Cocoanut Grove nightclub, Boston	492	Nov. 28, 1942
	North German Lloyd Steamships, Hoboken, N.J.	326	June 30, 1900
Explosions:	Texas City, Texas, ship explosion	552	Apr. 16, 1947
	Port Chicago, Calif., ship explosion	322	July 18, 1944
	New London, Texas, school explosion	294	Mar. 18, 1937
	Oakdale, Pa., munitions plant explosion	158	May 18, 1918
	Eddystone, Pa., munitions plant explosion	133	Apr. 10, 1917
Mines:	Monongha, West Va., coal mine explosion	361	Dec. 6, 1907
	Dawson, New Mexico, coal mine fire	263	Oct. 22, 1913
	Cherry, Ill., coal mine fire	259	Nov. 13, 1909
	Jacobs Creek, Pa., coal mine explosion	239	Dec. 19, 1907
	Scofield, Utah, coal mine explosion	200	May 1, 1900

Source: World Almanac, National Transportation Safety Board, National Weather Service, National Fire Protection Association, Chicago Historical Society, American Red Cross, U.S. Bureau of Mines, National Oceanic and Atmospheric Administration, and city and state Boards of Health.

Principal Classes of Accidental Deaths by State, 1990

State	Total[a]		Motor-Vehicle[b]		Work[c]		Home		Public Non-Motor-Vehicle		Unclassified[d]	
	Deaths	Rate[e]	Deaths	Rate[e]	Deaths	Rate[e]	Deaths	Rate[e]	Deaths	Rate[e]	Deaths	Rate[e]
Total U.S.	**93,500**	**37.5**	**46,300**	**18.6**	**10,500**	**4.2**	**21,500**	**8.6**	**19,000**	**7.6**	...	...
Alabama	2,264	56.0	1,252	31.0	65	1.6	362	9.0	300	7.4	285	7.1
Alaska	...	...	...	...	...	...	...	...	...	...	...	...
Arizona	1,626	44.4	932	25.4	38	1.0	317	8.6	266	7.3	73	2.0
Arkansas	...	...	...	...	...	...	...	...	...	...	...	...
California	...	...	...	...	...	...	...	...	...	...	...	...
Colorado	...	...	...	...	...	...	...	...	...	...	...	...
Connecticut	...	...	...	...	...	...	...	...	...	...	...	...
Delaware	223	33.5	148	22.2	6	0.9	36	5.4	27	4.1	6	0.9
Dist. of Columbia	166	27.3	63	10.4	5	0.8	45	7.4	20	3.3	33	5.4
Florida	5,313	41.1	3,016	23.3	146	1.1	920	7.1	855	6.6	376	2.9
Georgia	...	...	...	...	...	...	...	...	...	...	...	...
Hawaii	346	31.2	189	17.1	8	0.7	53	4.8	96	8.7	0	0.0
Idaho	439	43.6	266	26.4	18	1.8	62	6.2	82	8.1	11	1.1
Illinois	...	...	...	...	...	...	...	...	...	...	...	...
Indiana	...	...	...	...	...	...	...	...	...	...	...	...
Iowa	...	...	...	...	...	...	...	...	...	...	...	...
Kansas	854	34.5	449	18.1	43	1.7	183	7.4	120	4.8	59	2.4
Kentucky	1,581	42.9	824	22.4	82	2.2	233	6.3	216	5.9	226	6.1
Louisiana	...	...	...	...	...	...	...	...	...	...	...	...
Maine	389	31.7	205	16.7	8	0.7	57	4.6	118	9.6	1	0.1
Maryland (8 mos.)	1,374	43.1	524	16.4	25	0.8	195	6.1	140	4.4	490	15.4
Massachusetts	...	...	...	...	...	...	...	...	...	...	...	...
Michigan	...	...	...	...	...	...	...	...	...	...	...	...
Minnesota	...	...	...	...	...	...	...	...	...	...	...	...
Mississippi	...	...	...	...	...	...	...	...	...	...	...	...
Missouri	2,243	43.8	1,173	22.9	80	1.6	427	8.3	525	10.3	38	0.7
Montana	...	...	...	...	...	...	...	...	...	...	...	...
Nebraska (3 mos.)	115	29.2	46	11.7	3	0.8	21	5.3	43	10.9	2	0.5
Nevada	...	...	...	...	...	...	...	...	...	...	...	...
New Hampshire	260	23.4	130	11.7	10	0.9	73	6.6	45	4.1	2	0.2
New Jersey	...	...	...	...	...	...	...	...	...	...	...	...
New Mexico	974	64.3	537	35.4	20	1.3	212	14.0	198	13.1	7	0.5
New York	4,232	23.5	2,181	12.1	104	0.6	910	5.1	1,034	5.7	3	(f)
North Carolina	2,436	36.7	1,486	22.4	170	2.6	428	6.5	94	1.4	258	3.9
North Dakota	247	38.7	126	19.7	12	1.9	50	7.8	57	8.9	2	0.3
Ohio (10 mos.)	2,481	27.4	1,366	15.1	104	1.2	685	7.6	320	3.5	6	0.1
Oklahoma	1,184	37.6	609	19.4	38	1.2	365	11.6	167	5.3	5	0.2
Oregon	1,225	43.1	617	21.7	60	2.1	196	6.9	266	9.4	86	3.0
Pennsylvania	...	...	...	...	...	...	...	...	...	...	...	...
Rhode Island	...	...	...	...	...	...	...	...	...	...	...	...
South Carolina	1,788	51.3	982	28.2	...	...	...	...	...	...	806	23.1
South Dakota	...	...	...	...	...	...	...	...	...	...	...	...
Tennessee	2,406	49.3	1,260	25.8	59	1.2	383	7.9	344	7.1	360	7.4
Texas	6,341	37.3	3,274	19.3	242	1.4	943	5.6	1,816	10.7	66	0.4
Utah	527	30.6	300	17.4	17	1.0	102	5.9	95	5.5	13	0.8
Vermont	...	...	...	...	...	...	...	...	...	...	...	...
Virginia (9 mos.)	1,682	36.2	833	18.0	55	1.2	250	5.4	531	11.4	13	0.3
Washington (10 mos.)	1,496	36.9	725	17.9	49	1.2	229	5.6	253	6.2	240	5.9
West Virginia	790	44.1	433	24.1	47	2.6	155	8.6	14	0.8	141	7.9
Wisconsin	...	...	...	...	...	...	...	...	...	...	...	...
Wyoming	231	50.9	129	28.4	14	3.1	33	7.3	32	7.0	23	5.1
Puerto Rico[g] (1 mo.)	28	10.2	11	4.0	0	0.0	0	0.0	7	2.6	10	3.6
Virgin Islands[g]	50	48.5	24	23.3	4	3.9	6	5.8	16	15.5	0	0.0

Source: Provisional reports of vital statistics registrars; deaths are by place of occurrence. U.S. totals are National Safety Council estimates.

[a]The all-class total may not equal the sum of the separate class totals because motor-vehicle and other transportation deaths occurring to persons in the course of their employment are included in the work death totals as well as the motor-vehicle and public nonmotor-vehicle totals.

[b]Differences between the figures given above and those on pages 68 and 69 are due in most cases to the inclusion of nontraffic deaths in this table.

[c]Work death totals may be too low where incomplete information on death certificates results in the deaths being included in public or unclassified. The work totals may include some cases which are not compensable. For compensable cases only, see page 41.

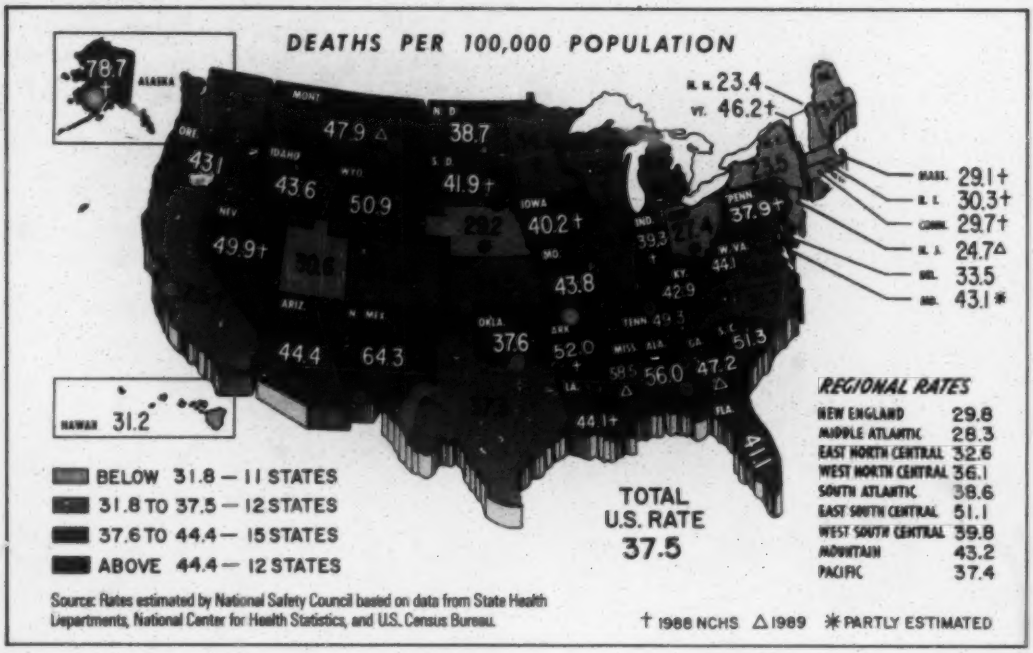
[d]Includes late effects (deaths occurring more than one year after the accident).

[e]Deaths per 100,000 population, adjusted to annual basis where less than 12 months were reported.

[f]Rate was less than 0.05.

[g]Not included in Total U.S.

Accidental death rates by state, 1990



Source: Rates estimated by National Safety Council based on data from State Health Departments, National Center for Health Statistics, and U.S. Census Bureau.

† 1988 NCHS △ 1989 * PARTLY ESTIMATED

Accidental Deaths by State, 1987-1988

State	Deaths[a]		Death Rates[c]		State	Deaths[a]		Death Rates[c]	
	1988[b]	1987	1988	1987		1988[b]	1987	1988	1987
U.S.	**97,100**	**95,020**	**39.7**	**39.2**	Missouri	2,365	2,211	46.0	43.3
Alabama	2,236	2,168	54.5	53.1	Montana	409	445	50.8	55.0
Alaska	413	353	78.7	67.2	Nebraska	626	660	39.1	41.4
Arizona	1,824	1,703	52.4	50.1	Nevada	526	488	49.9	48.5
Arkansas	1,246	1,274	52.0	53.4	New Hampshire	329	338	30.3	32.0
California	10,607	10,548	37.5	38.1	New Jersey	2,341	2,311	30.3	30.1
Colorado	1,131	1,303	34.3	39.6	New Mexico	930	890	61.6	59.5
Connecticut	959	957	29.7	29.8	New York	5,623	5,707	31.4	32.0
Delaware	298	269	45.2	41.5	North Carolina	3,307	3,213	51.0	50.1
Dist. of Columbia	324	295	52.9	47.4	North Dakota	255	238	38.2	35.4
Florida	5,582	5,353	45.2	44.5	Ohio	3,683	3,558	33.9	32.9
Georgia	3,135	3,050	49.5	49.0	Oklahoma	1,356	1,287	41.9	39.4
Hawaii	355	337	32.4	31.1	Oregon	1,298	1,248	46.9	45.8
Idaho	590	442	58.8	44.2	Pennsylvania	4,549	4,516	37.9	37.8
Illinois	4,183	3,589	36.0	31.0	Rhode Island	301	314	30.3	31.8
Indiana	2,184	2,145	39.3	38.8	South Carolina	1,888	1,897	54.5	55.4
Iowa	1,137	1,035	40.2	36.7	South Dakota	299	313	41.9	44.1
Kansas	975	998	39.1	40.3	Tennessee	2,638	2,526	53.9	52.0
Kentucky	1,659	1,698	44.5	45.6	Texas	6,619	6,471	39.3	38.6
Louisiana	1,944	1,858	44.1	41.8	Utah	605	606	35.8	36.1
Maine	506	437	42.0	36.8	Vermont	258	248	46.2	45.3
Maryland	1,519	1,613	32.8	35.6	Virginia	2,301	2,284	38.3	38.6
Massachusetts	1,714	1,715	29.1	29.3	Washington	1,693	1,723	36.4	37.9
Michigan	3,166	3,187	34.3	34.6	West Virginia	890	923	47.4	48.6
Minnesota	1,481	1,465	34.4	34.5	Wisconsin	1,699	1,651	35.2	34.5
Mississippi	1,412	1,461	53.9	55.7	Wyoming	278	230	57.9	46.9

Source: National Center for Health Statistics. See page 21 for comparability.

[a]Deaths for each state are by place of occurrence. These deaths include nonresident aliens, which are excluded from the U.S. totals (1988 – 546 deaths, 1987 – 529).

[b]Latest official figures.

[c]Rates are deaths per 100,000 population.

Accidental Deaths by State and Type of Accident, 1988

State	Population (000)	Type of Accident[a]								
		Total Deaths[b]	Motor-Vehicle[c]	Falls	Fires	Poisoning by Solid, Liquid		Poisoning by Gas	Drowning[d]	Ingestion of Food, Object
						Drugs	Nondrug			
Total U.S.	**244,529**	**97,100**	**49,078**	**12,096**	**4,965**	**4,865**	**488**	**873**	**4,199**	**3,805**
Alabama	4,103	2,235	1,158	218	181	57	8	20	92	74
Alaska	525	402	102	13	12	16	7	6	42	17
Arizona	3,483	1,792	984	190	36	106	16	15	110	38
Arkansas	2,396	1,241	663	105	75	30	4	9	54	84
California	28,323	10,490	5,553	961	299	1,343	53	46	484	260
Colorado	3,300	1,126	542	177	28	58	17	11	41	39
Connecticut	3,232	956	492	147	20	14	2	15	47	55
Delaware	660	296	167	39	15	20	1	5	9	6
Dist. of Columbia	613	324	123	57	26	9	0	1	8	18
Florida	12,338	5,520	3,203	593	199	204	25	37	433	150
Georgia	6,339	3,132	1,753	323	228	103	27	28	108	94
Hawaii	1,096	343	153	50	9	10	0	1	46	16
Idaho	1,003	581	274	58	15	18	4	4	34	11
Illinois	11,613	4,177	1,919	530	265	343	13	71	149	154
Indiana	5,559	2,182	1,142	317	92	42	7	29	82	74
Iowa	2,830	1,137	556	212	41	25	3	14	30	57
Kansas	2,496	975	494	139	53	30	1	9	31	61
Kentucky	3,726	1,659	843	175	100	47	10	10	74	78
Louisiana	4,407	1,937	941	157	135	55	4	19	115	85
Maine	1,206	505	268	66	30	10	1	3	25	18
Maryland	4,626	1,517	792	198	91	27	2	5	75	71
Massachusetts	5,890	1,707	748	325	88	68	4	19	60	124
Michigan	9,240	3,155	1,743	378	188	84	8	41	109	129
Minnesota	4,308	1,480	674	303	57	38	13	12	59	63
Mississippi	2,620	1,412	791	109	115	33	3	8	45	70
Missouri	5,140	2,362	1,162	336	124	82	5	21	87	112
Montana	805	403	209	41	15	7	0	8	15	11
Nebraska	1,603	623	287	115	12	16	5	22	15	23
Nevada	1,054	521	319	39	18	19	0	4	20	14
New Hampshire	1,085	326	174	57	10	6	1	4	10	7
New Jersey	7,718	2,331	1,073	350	140	176	4	14	79	97
New Mexico	1,510	913	526	99	33	14	2	3	23	20
New York	17,909	5,589	2,323	1,093	353	173	9	44	164	264
North Carolina	6,489	3,304	1,667	348	206	112	77	18	161	118
North Dakota	667	254	120	46	10	4	2	5	7	14
Ohio	10,865	3,677	1,752	539	222	175	6	62	107	150
Oklahoma	3,234	1,355	649	187	88	23	8	24	65	66
Oregon	2,768	1,290	720	172	31	44	6	8	60	26
Pennsylvania	11,998	4,539	2,022	662	261	403	13	43	121	203
Rhode Island	993	299	143	53	7	21	0	0	11	16
South Carolina	3,465	1,886	1,011	134	166	61	15	15	95	105
South Dakota	714	298	159	34	18	4	1	3	9	7
Tennessee	4,898	2,635	1,401	261	184	83	14	13	86	129
Texas	16,834	6,519	3,453	611	307	332	31	54	393	260
Utah	1,691	605	313	81	15	14	3	6	30	11
Vermont	558	254	126	31	13	9	1	5	8	14
Virginia	6,013	2,292	1,088	313	141	113	39	8	97	138
Washington	4,652	1,680	810	219	70	97	9	16	81	56
West Virginia	1,876	889	490	101	40	22	1	7	31	26
Wisconsin	4,832	1,698	845	311	75	62	2	24	66	67
Wyoming	480	277	158	23	8	3	1	4	6	5

Source: National Safety Council tabulations of National Center for Health Statistics mortality data.
[a]See pages 10 and 11 for U.S. totals of detailed categories within major types shown here.
[b]Deaths are by place of occurrence and exclude nonresident aliens. See also page 17.

Accidental Deaths by State and Type of Accident, 1988, Cont.

State	Type of Accident[d]									
	Medical Misadventures[c]	Natural, Envir. Factors	Firearms	Machinery	Air Transport	Suffocation, Mechanical	Falling Object	Electric Current	Railway	Other Accident
Total U.S.	**2,858**	**1,798**	**1,501**	**1,176**	**1,012**	**956**	**835**	**714**	**571**	**5,310**
Alabama	93	31	54	29	11	14	29	15	15	136
Alaska	4	23	34	7	35	5	6	1	0	72
Arizona	42	59	19	18	52	17	13	8	9	60
Arkansas	23	28	23	19	22	14	26	14	7	41
California	231	99	145	69	149	100	57	54	63	524
Colorado	19	28	15	12	47	8	12	5	5	62
Connecticut	44	19	10	7	6	7	3	1	2	65
Delaware	3	9	0	0	1	0	1	2	0	18
Dist. of Columbia	34	19	3	0	0	1	1	1	1	22
Florida	123	39	50	36	54	43	21	58	26	226
Georgia	72	59	59	39	11	30	39	20	18	121
Hawaii	8	5	3	2	2	7	1	1	0	29
Idaho	14	20	13	14	21	10	8	7	2	54
Illinois	141	118	32	40	27	61	24	45	48	197
Indiana	52	41	51	33	23	20	28	18	10	121
Iowa	25	21	7	33	8	21	15	7	7	55
Kansas	23	27	25	21	8	11	11	7	1	33
Kentucky	54	33	35	35	14	16	16	17	6	96
Louisiana	46	26	65	24	14	10	17	19	13	192
Maine	13	3	1	6	8	3	9	5	1	35
Maryland	76	18	4	29	7	7	4	14	5	92
Massachusetts	57	35	8	6	4	24	7	9	8	113
Michigan	76	75	29	29	21	35	32	24	11	143
Minnesota	54	24	10	24	13	23	18	7	5	83
Mississippi	25	38	40	21	8	6	20	4	6	70
Missouri	59	69	42	39	15	16	34	18	11	130
Montana	8	19	11	8	10	9	10	2	1	19
Nebraska	27	13	16	23	1	6	5	10	3	24
Nevada	11	12	9	7	14	2	4	5	1	23
New Hampshire	9	9	2	3	1	6	3	1	0	23
New Jersey	71	27	15	11	13	24	9	12	22	194
New Mexico	43	46	6	6	25	8	9	8	5	37
New York	291	83	95	45	15	127	36	22	74	378
North Carolina	109	86	57	43	40	15	24	35	24	164
North Dakota	6	8	4	5	0	3	3	0	2	15
Ohio	122	64	52	62	17	28	23	28	17	251
Oklahoma	27	35	34	18	12	6	13	15	6	79
Oregon	30	17	20	19	10	11	15	4	11	86
Pennsylvania	221	81	31	58	35	29	39	29	30	258
Rhode Island	19	7	1	3	3	1	1	0	0	13
South Carolina	32	30	43	23	10	11	14	20	10	91
South Dakota	4	13	5	8	4	8	4	0	0	17
Tennessee	61	40	91	30	37	24	28	14	5	134
Texas	136	87	152	76	76	43	57	74	43	334
Utah	28	15	4	7	19	6	7	4	3	39
Vermont	17	6	0	3	8	1	5	3	1	3
Virginia	36	52	27	48	21	21	25	17	10	98
Washington	93	15	9	10	34	21	15	6	13	106
West Virginia	35	16	12	21	3	8	21	9	2	44
Wisconsin	5	41	19	40	10	27	10	13	6	75
Wyoming	6	10	9	7	13	2	3	2	2	15

[c]See page 69 for motor-vehicle deaths by place of residence.
[d]Includes both transport and nontransport drownings.
[e]Complications and misadventures of surgical and medical care.

Nontransport Accidental Deaths[a] by State and Place of Accident, 1988

State	Total[a]	Place of Accident									
		Home	Farm	Mine, Quarry	Industrial Place	Place for Recreation or Sport	Street, Highway	Public Building	Resident Institution	Other[b]	Unspecified
Total U.S	**41,444**	**16,642**	**831**	**83**	**1,513**	**958**	**942**	**1,129**	**2,022**	**4,288**	**13,036**
Alabama	918	365	14	2	34	14	14	16	25	77	357
Alaska	213	31	0	0	5	2	1	1	1	45	127
Arizona	678	310	1	6	15	21	21	20	34	130	120
Arkansas	507	203	16	2	27	16	13	8	25	62	135
California	4,239	1,950	21	2	109	88	149	225	195	432	1,068
Colorado	482	188	8	4	13	30	17	21	46	44	111
Connecticut	395	100	4	1	12	19	6	6	15	34	198
Delaware	123	55	1	0	0	3	1	1	5	18	39
Dist. of Columbia	162	36	0	0	3	3	7	3	7	41	62
Florida	1,985	960	11	3	75	73	37	75	111	312	328
Georgia	1,218	682	28	1	42	33	39	45	73	109	166
Hawaii	172	44	1	1	0	10	5	9	4	38	60
Idaho	233	88	9	1	13	4	6	9	21	43	39
Illinois	1,983	946	25	2	96	35	88	70	81	177	463
Indiana	923	311	37	2	45	18	14	22	40	58	376
Iowa	510	191	53	0	30	10	7	15	76	20	108
Kansas	436	187	18	1	18	6	10	14	77	21	84
Kentucky	709	247	27	4	38	11	10	18	32	65	257
Louisiana	817	299	15	1	38	17	17	12	18	127	273
Maine	199	55	5	0	8	3	0	3	5	40	80
Maryland	605	234	3	0	17	7	17	13	29	54	231
Massachusetts	841	282	1	1	15	17	21	23	46	54	381
Michigan	1,244	576	22	1	42	51	28	24	41	72	387
Minnesota	692	252	23	1	18	32	7	17	68	27	247
Mississippi	549	248	19	1	36	13	10	17	17	27	161
Missouri	1,081	419	47	2	26	14	21	29	65	87	371
Montana	171	46	11	4	11	6	3	8	8	24	50
Nebraska	291	133	28	1	13	6	6	6	31	12	55
Nevada	166	57	1	4	11	11	6	12	6	22	36
New Hampshire	131	48	0	0	8	8	3	2	5	13	44
New Jersey	1,104	383	4	0	38	17	44	29	21	78	490
New Mexico	297	123	5	2	8	12	10	7	10	62	58
New York	2,748	927	16	1	63	26	44	46	145	351	1,129
North Carolina	1,413	469	48	3	55	23	23	18	40	131	603
North Dakota	120	43	6	0	4	5	1	3	13	14	31
Ohio	1,705	696	33	2	69	40	24	38	79	111	613
Oklahoma	631	209	25	3	24	20	5	16	36	60	233
Oregon	468	175	6	0	30	12	8	9	30	73	125
Pennsylvania	2,170	904	32	3	81	25	68	39	61	146	811
Rhode Island	125	52	0	0	3	0	3	5	14	12	36
South Carolina	773	319	5	0	31	20	9	17	6	115	251
South Dakota	121	54	13	0	1	3	7	2	8	17	16
Tennessee	1,095	404	25	2	34	18	23	22	38	66	463
Texas	2,707	936	54	1	103	65	32	62	100	382	972
Utah	222	89	8	2	10	10	2	5	7	30	59
Vermont	102	42	3	1	4	4	1	2	3	10	32
Virginia	1,061	421	29	8	57	21	12	19	42	104	368
Washington	671	279	3	0	19	25	12	16	48	92	177
West Virginia	339	142	19	5	16	10	8	8	16	45	70
Wisconsin	784	402	44	2	36	14	19	18	96	87	66
Wyoming	95	30	4	0	9	7	3	4	2	17	19

Source: National Safety Council tabulations of National Center for Health Statistics mortality data.

[a]Excludes: transport deaths, E800-E848, 51,855 deaths; complications and misadventures of surgical and medical care, E870-E879, 2,858 deaths; late effects, E929, 763 deaths; and adverse effects of drugs in therapeutic use, E930-E949, 180 deaths; for which place of accident is not coded.

[b]Includes mostly outdoor public nonbuilding, nonrecreational places.

Comparability of Accidental Death Totals

Accidental deaths are classified on the basis of a World Health Organization standard, "The International Statistical Classification of Diseases, Injuries, and Causes of Death (ICD)." The ICD is revised each decade and these revisions can affect comparability from year to year.

The sixth revision (1948) substantially expanded the list of external causes and provided for classifying the place of occurrence. Changes in the classification procedures for this revision as well as the seventh (1958) and eighth (1968) revisions classified as disease deaths some cases previously classified as accidents. The eighth revision also expanded and reorganized some external cause sections. The ninth revision (1979), provides more detail on the agency involved, the victim's activity, and the accident location. Specific external cause categories affected by the revisions are noted in the historical tables. The tenth revision is anticipated to be in use in 1993.

Beginning with 1970 data, tabulations published by the National Center for Health Statistics no longer include deaths of nonresident aliens. In 1988, there were 546 such accidental deaths of which 313 were motor-vehicle.

Accidental Deaths and Death Rates, Canadian Provinces, 1989

Province	All Types[a]		Motor-Vehicle	Falls	Fires, Burns	Drowning[c]	Ingest. of Food, Object	Poison[d]
	Number	Rate[b]						
All Provinces	**9,436**	**36.0**	**4,355**	**1,994**	**419**	**385**	**299**	**524**
Alberta	934	38.4	513	134	31	34	19	31
British Columbia	1,275	41.7	524	268	53	62	21	120
Manitoba	392	36.2	165	90	16	32	12	16
New Brunswick	296	41.2	162	49	21	15	8	8
Newfoundland	184	32.3	88	23	11	19	2	7
Northwest Territories	39	73.0	15	1	4	5	...	2
Nova Scotia	333	37.6	134	69	29	13	18	7
Ontario	3,171	33.1	1,348	852	143	92	110	186
Prince Edward Island	60	46.1	18	11	6	6	2	2
Quebec	2,289	34.2	1,161	401	91	90	87	120
Saskatchewan	450	44.7	222	96	14	15	19	22
Yukon	13	51.2	5	...	...	2	1	3
Rate[b] (All Provinces)		**36.0**	**16.6**	**7.6**	**1.6**	**1.5**	**1.1**	**2.0**

Source: Vital Statistics and Health Status Section, Health Division, Statistics Canada.
[a]Includes types not shown separately.
[b]Per 100,000 population.
[c]Excludes water transport drownings.
[d]Includes solid, liquid, gas, vapor and late effects.

Accidental Deaths and Death Rates by Nation

Nation	Year	Deaths	Rate[a]	Nation	Year	Deaths	Rate[a]
Bahrain	1988	50	11.1	Scotland	1989	1,844	36.2
Hong Kong	1987	776	13.8	**United States**	**1988**	**97,100**	**39.5**
Singapore	1987	431	16.5	Yugoslavia	1988	9,325	39.6
England, Wales	1989	11,529	22.8	Luxembourg	1989	152	40.4
Netherlands	1988	3,464	23.5	Greece	1988	4,243	42.4
Chile	1987	3,038	24.2	Bulgaria	1989	3,865	43.0
Japan	1989	31,049	25.4	New Zealand	1987	1,468	44.4
Thailand	1987	14,009	26.1	Portugal	1989	4,640	45.0
Kuwait	1987	535	28.6	Belgium	1986	4,451	45.1
Northern Ireland	1989	452	28.6	Norway	1988	1,953	46.4
Ireland	1988	1,045	29.5	Uruguay	1987	1,476	48.3
Costa Rica	1988	902	31.5	Ecuador	1988	4,968	48.7
Mauritius	1987	317	31.6	Austria	1989	3,792	49.7
West Germany	1989	20,070	32.3	Switzerland	1989	3,302	49.7
Iceland	1989	85	33.6	Denmark	1988	2,598	50.7
Panama	1987	780	34.3	Poland	1989	20,538	54.1
Sweden	1987	2,893	34.4	Czechoslovakia	1989	8,769	56.1
Australia	1988	5,751	34.8	Finland	1988	2,823	57.1
Israel	1987	1,519	34.8	France	1988	33,101	59.2
Canada	1988	9,152	35.3	Hungary	1989	8,130	76.9
				Cuba	1988	8,278	81.5

Source: World Health Organization.
NOTE: Differences in reporting among nations affect comparisons.
[a]Per 100,000 population.

Children and youths

Deaths. For children and youths aged 1 to 24 years, accidents are the leading cause of death, accounting for almost half of the 54,521 total deaths of these persons in 1988 (the latest detailed data available, see table below). Motor-vehicle accidents were the leading cause of accidental death for this age group, followed by drowning and fires and burns. Although motor-vehicle deaths are the leading type overall, information not shown below indicates that for those under age 5, fires are the leading cause of accidental deaths in many highly urban states, and drownings are the leading cause in several other states.

While accidental deaths decrease fairly steadily for those aged 1 to 12, they increase markedly for teenagers—from under 500 for those age 13 to over 2,200 for those age 18. Motor-vehicle accidents account for most of this increase.

For infants under 1 year of age, accidents are the fourth leading cause of death, following certain conditions originating in the perinatal period, congenital anomalies, and sudden infant death syndrome (see page 6). Although accidents account for less than 3 per cent of deaths for those under age 1, the number of accidental deaths for this age is greater than that for any other age less than 16.

Total Deaths and Accidental Deaths, Ages 0-24, 1988

Age	Population (000)	All Deaths	Accidental Deaths	Motor-Vehicle	Drowning	Fires, Burns	Firearms	Poison (solid, liquid)	Falls	Mechanical Suffocation	Other Accident
Under 1 year	3,847	38,910	936	215	88	120	0	9	39	198	267
1 to 24 years	**86,634**	**54,521**	**25,580**	**17,834**	**1,978**	**1,426**	**743**	**519**	**445**	**291**	**2,344**
1 year	3,659	2,898	865	258	215	166	9	21	24	41	131
2 years	3,645	1,904	751	258	194	158	12	6	15	12	96
3 years	3,678	1,470	691	258	129	179	11	4	17	6	87
4 years	3,604	1,157	551	231	73	148	9	2	9	9	70
5 years	3,671	1,039	490	269	68	88	9	1	5	11	39
6 years	3,660	881	404	232	50	55	13	3	3	5	43
7 years	3,685	822	431	252	53	52	11	1	5	9	48
8 years	3,516	806	400	229	54	40	7	3	9	8	50
9 years	3,495	809	377	194	48	52	11	0	5	15	52
10 years	3,451	773	375	212	42	36	31	0	4	10	40
11 years	3,389	754	333	191	41	28	22	1	7	8	35
12 years	3,233	776	349	204	32	25	32	1	4	9	42
13 years	3,306	1,001	463	237	58	30	52	4	9	17	56
14 years	3,248	1,264	593	403	48	14	48	10	7	11	52
15 years	3,354	1,726	816	567	76	17	46	10	13	13	74
16 years	3,541	2,704	1,437	1,128	84	18	65	12	15	6	109
17 years	3,840	3,430	1,847	1,481	86	29	59	22	23	11	136
18 years	3,712	4,021	2,214	1,834	102	31	48	31	21	14	133
19 years	3,768	4,150	2,184	1,775	98	31	48	37	31	10	154
20 years	3,659	4,140	2,119	1,682	98	37	42	40	40	13	167
21 years	3,659	4,268	2,040	1,618	86	41	45	53	41	10	146
22 years	3,734	4,315	1,940	1,505	75	35	42	71	35	12	165
23 years	3,954	4,617	1,978	1,463	88	55	32	80	48	13	201
24 years	4,176	4,796	1,932	1,353	82	61	39	106	55	18	218

Source: National Safety Council tabulation of National Center for Health Statistics mortality data.

Injuries. Of the 58.0 million injuries suffered in the U.S. in 1989, about 41 per cent of the victims were under 25 years of age, according to information from the National Health Interview Survey (see page 13). An estimated 148,000 emergency-room treated injuries were associated with toys in 1989 according to the Consumer Product Safety Commission (see page 96). Nursery equipment was associated with about 92,000 emergency-room treated injuries. A recent study[a] of children under age 1 treated at one hospital emergency room showed that falls are by far the leading cause of unintentional injury, accounting for almost half the treated cases.

[a]Rivara, F.P., Kamitsuka, M.D., Quan, L. Injuries to children younger than 1 year of age. *Pediatrics, 81* (1), January 1988, 93-97.

Elderly

Deaths. The most common types of fatal accidents experienced by older Americans change with increasing age. Data for five-year age groups, shown in the table below, indicate that motor-vehicle accidents are the most common type of fatal accident, with falls second most common, through age 79, but the situation reverses beginning with age 80. For ages 90 and older, suffocation by ingestion of food or other object is second most important after falls. The age groups starting at 65 years have population death rates that are higher than the all-ages average of 39.5 per 100,000 population.

Accidental Deaths by Type of Accident, Ages 55 and Over, 1988

Age Group	Population (000)	Accidental Deaths		Motor Vehicle	Falls	Suffocation by Ingestion	Surg. & Medical Misadv.[b]	Fires & Burns	Poisoning by		Drowning[c]	All Other
		Number	Rate[a]						Solid & Liquid	Gas & Vapor		
55-59	10,898	3,639	33.4	1,712	381	136	156	236	168	41	104	705
60-64	10,934	4,024	36.8	1,708	497	231	220	295	162	52	117	742
65-69	9,992	4,386	43.9	1,741	692	310	348	286	160	32	88	729
70-74	7,914	4,585	57.9	1,688	965	368	370	312	115	25	95	647
75-79	5,907	5,019	85.0	1,573	1,396	435	407	311	130	28	102	637
80-84	3,619	5,126	141.6	1,299	1,850	513	373	279	95	27	61	629
85-89	1,908	4,334	227.1	648	2,088	458	290	179	89	25	53	504
90-94	768	2,534	329.9	173	1,442	341	169	87	37	12	17	256
95-99	215	845	393.0	30	520	114	48	31	16	2	5	79
100 and over	52	167	321.2	7	107	20	17	2	4	0	1	9
55 and over	**52,207**	**34,659**	**66.4**	**10,579**	**9,938**	**2,926**	**2,398**	**2,018**	**976**	**244**	**643**	**4,937**
65 and over	**30,375**	**26,996**	**88.9**	**7,159**	**9,060**	**2,559**	**2,022**	**1,487**	**646**	**151**	**422**	**3,490**
75 and over	**12,469**	**18,025**	**144.6**	**3,730**	**7,403**	**1,881**	**1,304**	**889**	**371**	**94**	**239**	**2,114**

Source: National Safety Council tabulation of National Center for Health Statistics mortality data.
[a]Deaths per 100,000 population in each age group. [b]Surgical and medical complications and misadventures.
[c]Includes both transport and nontransport drownings.

Injuries. According to the 1989 National Health Interview Survey, 8.3 per cent of all injury episodes, or 4,809,000, involved persons 65 years of age or older. The number of episodes per 100 persons per year was 16.5 for those 65 or older compared to 23.8 for all ages. Persons 65 and older had 126,104,000 days of restricted activity and 44,393,000 bed days of disability due to injuries. (See pages 12 and 13 for definitions and additional information.) The National Hospital Discharge Survey reports that of 2,806,000 hospitalizations for injuries in 1989, persons 65 years and older accounted for 791,000 (28 per cent), of which 412,000 (52 per cent) were for fractures.

The distribution of mechanism of severe injury for the elderly (65 years or older) is substantially different from that of the nonelderly according to data from the Major Trauma Outcome Study (MTOS)[a]. For elderly patients (mean age 76.3 years), falls, motor-vehicle accidents, pedestrian accidents, and stab and gunshot wounds were the leading injury mechanisms accounting for 40.6, 28.2, 10.0, and 8.1 per cent of cases, respectively. For the nonelderly, motor-vehicle accidents, stab and gunshot wounds, falls, and pedestrian accidents were the leading mechanisms with 33.5, 24.9, 11.0, and 7.9 per cent of cases, respectively. The study covered 3,833 elderly and 42,944 nonelderly patients treated in 111 U.S. and Canadian trauma centers between 1982 and 1986. Although not population-based and biased toward more severe injuries, the MTOS data includes approximately 0.4 per cent of all injured patients hospitalized in the U.S., 1.0 per cent of all trauma deaths, and 2.0 per cent of all in-hospital trauma deaths during the study years.

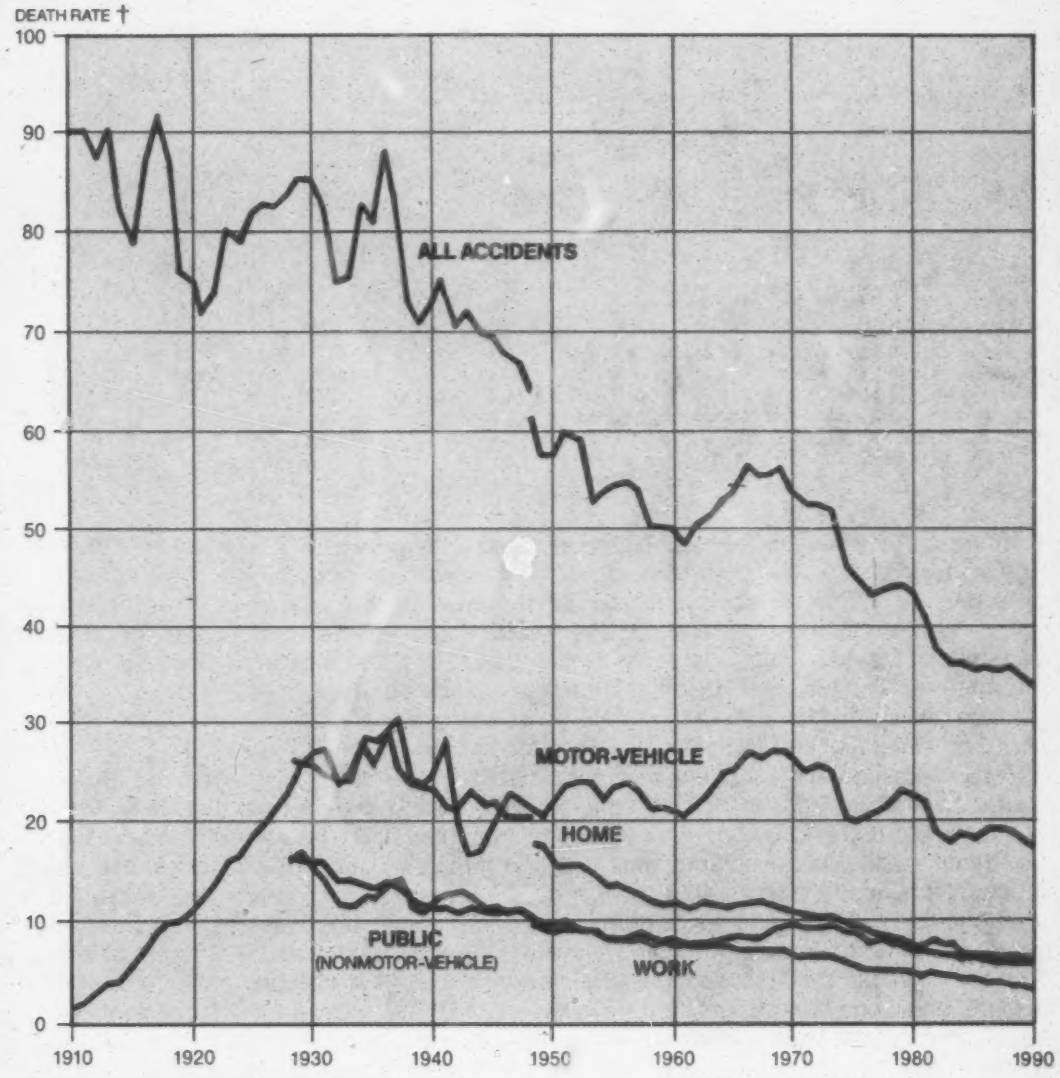
[a]Champion, H.R., Copes, W.S., Buyer, D., Flanagan, M.E., Bain, L., & Sacco, W.J. (1989). Major trauma in geriatric patients. *American Journal of Public Health, 79* (9), 1278-1282.

Trends in accidental death rates

(See pages 26 and 27 for death totals and crude rates.)

Between 1912 and 1990, accidental deaths per 100,000 population were reduced 55 per cent from 82 to 37. The reduction in the overall rate during a period when the nation's population more than doubled has resulted in 3,200,000 fewer people being killed accidentally than would have been killed if the rate had not been reduced.

The standardized rates shown below eliminate the effect of shifts in the age distribution of the population, which has changed greatly during this century. Decreases in standardized death rates from 1980 to 1990 are as follows: all accidents (–21%), motor-vehicle (–20%), work (–28%), home (–19%), and public (–23%).



†Deaths per 100,000 population, adjusted to 1940 age distribution. The break at 1948 shows the estimated effect of classification changes.

Cost equivalents

The costs of accidental deaths and injuries are immense—billions of dollars. Since figures this large can be difficult to comprehend, it is sometimes useful to reduce the numbers to a more understandable scale by relating them to quantities encountered in daily life. The table below shows how the costs of accidental injuries compare to common quantities such as taxes, new car prices, or stock dividends.

The cost of...	is equivalent to...
...all accidents ($173.8 billion)	...36 cents of every dollar paid in 1990 federal personal income taxes, *or* ...28 cents of every dollar spent on food in the U.S. in 1990.
...motor-vehicle accidents ($89.0 billion)	...95 cents of every dollar consumers spent on gasoline and oil in 1990, *or* ...a $9,400 rebate on each new car sold in 1990.
...work accidents ($63.8 billion)	...48 cents of every dollar of 1990 corporate dividends to stockholders, *or* ...21 cents of every dollar of 1990 pre-tax corporate profits.
...home accidents ($23.5 billion)	...a $26,300 rebate on each new single-family home built in 1990, *or* ...16 cents of every dollar of property taxes paid in 1990.
...public accidents ($13.4 billion)	...a $1.5 million grant to each public library in the U.S., *or* ...a $15,300 bonus for each police officer and firefighter.

Source: National Safety Council estimates.

While you speak!

While you make a 10-minute safety speech—2 persons will be killed and about 170 will suffer a disabling injury. Costs will amount to $3,300,000. On the average, there are 11 accidental deaths and about 1,030 disabling injuries every hour during the year.

Deaths and disabling injuries in the nation by class of accident occurred at the following rates in 1990:

Class of Accident	Severity	One Every—	No. per Hour	No. per Day	No. per Week	Total 1990
All Accidents	**Deaths**	**6 minutes**	**11**	**256**	**1,800**	**93,500**
	Injuries	4 seconds	1,030	24,700	173,100	9,000,000
Motor-Vehicle	**Deaths**	**11 minutes**	**5**	**127**	**890**	**46,300**
	Injuries	19 seconds	190	4,700	32,700	1,700,000
Work	**Deaths**	**50 minutes**	**1**	**29**	**200**	**10,500**
	Injuries	18 seconds	210	4,900	34,600	1,800,000
Workers Off-the-Job	**Deaths**	**14 minutes**	**4**	**101**	**710**	**36,800**
	Injuries	11 seconds	320	7,700	53,800	2,800,000
Home	**Deaths**	**24 minutes**	**2**	**59**	**410**	**21,500**
	Injuries	10 seconds	370	8,800	61,500	3,200,000
Public Nonmotor-Vehicle	**Deaths**	**28 minutes**	**2**	**52**	**370**	**19,000**
	Injuries	13 seconds	270	6,600	46,200	2,400,000

Source: National Safety Council estimates.

Principal Classes of Accidental Deaths, 1903-1990

Year	Total[a]		Motor-Vehicle		Work		Home		Public Nonmotor-Vehicle	
	Deaths	Rate[b]	Deaths	Rate[b]	Deaths	Rate[b]	Deaths	Rate[b]	Deaths	Rate[b]
1903	70,600	87.2	(c)		(c)		(c)		(c)	
1904	71,500	86.6	(c)		(c)		(c)		(c)	
1905	70,900	84.2	(c)		(c)		(c)		(c)	
1906	80,000	93.2	400	0.5	(c)		(c)		(c)	
1907	81,900	93.6	700	0.8	(c)		(c)		(c)	
1908	72,300	81.2	800	0.9	(c)		(c)		(c)	
1909	72,700	80.1	1,300	1.4	(c)		(c)		(c)	
1910	77,900	84.4	1,900	2.0	(c)		(c)		(c)	
1911	79,300	84.7	2,300	2.5	(c)		(c)		(c)	
1912	78,400	82.5	3,100	3.3	(c)		(c)		(c)	
1913	82,500	85.5	4,200	4.4	(c)		(c)		(c)	
1914	77,000	78.6	4,700	4.8	(c)		(c)		(c)	
1915	76,200	76.7	6,600	6.6	(c)		(c)		(c)	
1916	84,800	84.1	8,200	8.1	(c)		(c)		(c)	
1917	90,100	88.2	10,200	10.0	(c)		(c)		(c)	
1918	85,100	82.1	10,700	10.3	(c)		(c)		(c)	
1919	75,500	71.9	11,200	10.7	(c)		(c)		(c)	
1920	75,900	71.2	12,500	11.7	(c)		(c)		(c)	
1921	74,000	68.4	13,900	12.9	(c)		(c)		(c)	
1922	76,300	69.4	15,300	13.9	(c)		(c)		(c)	
1923	84,400	75.7	18,400	16.5	(c)		(c)		(c)	
1924	85,600	75.6	19,400	17.1	(c)		(c)		(c)	
1925	90,000	78.4	21,900	19.1	(c)		(c)		(c)	
1926	91,700	78.7	23,400	20.1	(c)		(c)		(c)	
1927	92,700	78.4	25,800	21.8	(c)		(c)		(c)	
1928	95,000	79.3	28,000	23.4	19,000	15.8	30,000	24.9	21,000	17.4
1929	98,200	80.8	31,200	25.7	20,000	16.4	30,000	24.6	20,000	16.4
1930	99,100	80.5	32,900	26.7	19,000	15.4	30,000	24.4	20,000	16.3
1931	97,300	78.5	33,700	27.2	17,500	14.1	29,000	23.4	20,000	16.1
1932	89,000	71.3	29,500	23.6	15,000	12.0	29,000	23.2	18,000	14.4
1933	90,932	72.4	31,363	25.0	14,500	11.6	29,500	23.6	18,500	14.7
1934	100,977	79.9	36,101	28.6	16,000	12.7	34,000	26.9	18,000	14.2
1935	99,773	78.4	36,369	28.6	16,500	13.0	32,000	25.2	18,000	14.2
1936	110,052	85.9	38,089	29.7	18,500	14.5	37,000	28.9	19,500	15.2
1937	105,205	81.7	39,643	30.8	19,000	14.8	32,000	24.8	18,000	14.0
1938	93,805	72.3	32,582	25.1	16,000	12.3	31,000	23.9	17,000	13.1
1939	92,623	70.8	32,386	24.7	15,500	11.8	31,000	23.7	16,000	12.2
1940	96,885	73.4	34,501	26.1	17,000	12.9	31,500	23.9	16,500	12.5
1941	101,513	76.3	39,969	30.0	18,000	13.5	30,000	22.5	16,500	12.4
1942	95,889	71.6	28,309	21.1	18,000	13.4	30,500	22.8	16,000	12.0
1943	99,038	73.8	23,823	17.8	17,500	13.0	33,500	25.0	17,000	12.7
1944	95,237	71.7	24,282	18.3	16,000	12.0	32,500	24.5	16,000	12.0
1945	95,918	72.4	28,076	21.2	16,500	12.5	33,500	25.3	16,000	12.1
1946	98,033	70.0	33,411	23.9	16,500	11.8	33,000	23.6	17,500	12.5
1947	99,579	69.4	32,697	22.8	17,000	11.9	34,500	24.1	18,000	12.6
1948 (5th Revn.)[d]	98,001	67.1	32,259	22.1	16,000	11.0	35,000	24.0	17,000	11.6
1948 (6th Revn.)[d]	93,000	63.7	32,259	22.1	16,000	11.0	31,000	21.2	16,000	11.0
1949	90,106	60.6	31,701	21.3	15,000	10.1	31,000	20.9	15,000	10.1
1950	91,249	60.3	34,763	23.0	15,500	10.2	29,000	19.2	15,000	9.9
1951	95,871	62.5	36,996	24.1	16,000	10.4	30,000	19.6	16,000	10.4
1952	96,172	61.8	37,794	24.3	15,000	9.6	30,500	19.6	16,000	10.3
1953	95,032	60.1	37,955	24.0	15,000	9.5	29,000	18.3	16,500	10.4
1954	90,032	55.9	35,586	22.1	14,000	8.7	28,000	17.4	15,500	9.6
1955	93,443	56.9	38,426	23.4	14,200	8.6	28,500	17.3	15,500	9.4
1956	94,780	56.6	39,628	23.7	14,300	8.5	28,000	16.7	16,000	9.6
1957	95,307	55.9	38,702	22.7	14,200	8.3	28,000	16.4	17,500	10.3
1958	90,604	52.3	36,981	21.3	13,300	7.7	26,500	15.3	16,500	9.5
1959	92,080	52.2	37,910	21.5	13,800	7.8	27,000	15.3	16,500	9.3
1960	93,806	52.1	38,137	21.2	13,800	7.7	28,000	15.6	17,000	9.4
1961	92,249	50.4	38,091	20.8	13,500	7.4	27,000	14.8	16,500	9.0
1962	97,139	52.3	40,804	22.0	13,700	7.4	28,500	15.3	17,000	9.2
1963	100,669	53.4	43,564	23.1	14,200	7.5	28,500	15.1	17,500	9.3
1964	105,000	54.9	47,700	25.0	14,200	7.4	28,000	14.6	18,500	9.7
1965	108,004	55.8	49,163	25.4	14,100	7.3	28,500	14.7	19,500	10.1
1966	113,563	58.1	53,041	27.1	14,500	7.4	29,500	15.1	20,000	10.2

See source and footnotes on page 27.

Principal Classes of Accidental Deaths, 1903-1990, Cont.

Year	Total[a]		Motor-Vehicle		Work		Home		Public Nonmotor-Vehicle	
	Deaths	Rate[b]	Deaths	Rate[b]	Deaths	Rate[b]	Deaths	Rate[b]	Deaths	Rate[b]
1967	113,169	57.3	52,924	26.8	14,200	7.2	29,000	14.7	20,500	10.4
1968	114,864	57.6	54,862	27.5	14,300	7.2	28,000	14.0	21,500	10.8
1969	116,385	57.8	55,791	27.7	14,300	7.1	27,500	13.7	22,500	11.2
1970	114,638	56.2	54,633	26.8	13,800	6.8	27,000	13.2	23,500	11.5
1971	113,439	54.8	54,381	26.3	13,700	6.6	26,500	12.8	23,500	11.4
1972	115,448	55.2	56,278	26.9	14,000	6.7	26,500	12.7	23,500	11.2
1973	115,821	54.8	55,511	26.3	14,300	6.8	26,500	12.5	24,500	11.6
1974	104,622	49.0	46,402	21.8	13,500	6.3	26,000	12.2	23,000	10.8
1975	103,030	47.8	45,853	21.3	13,000	6.0	25,000	11.6	23,000	10.6
1976	100,761	46.3	47,038	21.6	12,500	5.7	24,000	11.0	21,500	10.0
1977	103,202	47.0	49,510	22.5	12,900	5.9	23,200	10.6	22,200	10.1
1978	105,561	47.5	52,411	23.6	13,100	5.9	22,800	10.3	22,000	9.9
1979	105,312	46.9	53,524	23.8	13,000	5.8	22,500	10.0	21,000	9.4
1980	105,718	46.5	53,172	23.4	13,200	5.8	22,800	10.0	21,300	9.4
1981	100,704	43.9	51,385	22.4	12,500	5.4	21,700	9.4	19,800	8.6
1982	94,082	40.6	45,779	19.7	11,900	5.1	21,200	9.1	19,500	8.4
1983	92,488	39.5	44,452	19.0	11,700	5.0	21,200	9.0	19,400	8.3
1984	92,911	39.3	46,263	19.6	11,500	4.9	21,200	9.0	18,300	7.7
1985	93,457	39.1	45,901	19.2	11,500	4.8	21,600	9.0	18,800	7.9
1986	95,277	39.5	47,865	19.9	11,100	4.6	21,700	9.0	18,700	7.8
1987	95,020	39.0	48,290	19.8	11,300	4.6	21,400	8.8	18,400	7.6
1988	97,100	39.7	49,078	20.1	11,000	4.5	22,700	9.3	18,400	7.5
1989	95,500	38.7	47,100	19.1	10,700	4.3	22,800	9.2	18,700	7.6
1990	93,500	37.5	46,300	18.6	10,500	4.2	21,500	8.6	19,000	7.6
					Changes					
1980 to 1990	**-12%**	**-19%**	**-13%**	**-21%**	**-20%**	**-28%**	**-6%**	**-14%**	**-11%**	**-19%**
1989 to 1990	**- 2%**	**- 3%**	**- 2%**	**- 3%**	**- 2%**	**- 2%**	**-6%**	**- 7%**	**+ 2%**	**0%**

Source: Total and motor-vehicle deaths, 1903-1932 based on National Center for Health Statistics death registration states; 1933-1948 (5th Revn.), 1949-1963, 1965-1988 are NCHS totals for the U.S. All other figures are National Safety Council estimates: 1990 preliminary, 1989 revised. See page 21 for comparability.
[a]Duplications between Motor-Vehicle, Work and Home are eliminated in the Total column.
[b]Rates are deaths per 100,000 population. [c]Data insufficient to estimate yearly totals.
[d]In 1948, a revision was made in the International List of Causes of Death. The first figures for 1948 are comparable with those for earlier years, the second with those for later years.

Estimated Structure Fires and Loss by Property Use, 1989

The table below shows the number of fires and loss by property use for structure fires in 1989, as estimated by the National Fire Protection Association. Structure and nonstructure fires together numbered 2,115,000 in 1989, with a property loss of $8,655,000,000.

Property Use	Fires		Loss	
	Number	%	$ millions	%
Total	**688,000**	**100.0%**	**7,518**	**100.0%**
Residential	513,500	74.6	3,998	53.2
One- and two-family dwellings[a]	*402,500*	*58.5*	*3,335*	*44.4*
Apartments	*96,000*	*14.0*	*541*	*7.2*
Hotels and motels	*6,500*	*0.9*	*87*	*1.1*
Other residential	*8,500*	*1.2*	*35*	*0.5*
Storage in structures[b]	44,500	6.5	673	9.0
Stores and offices	34,500	5.0	703	9.3
Special structures	32,000	4.7	293	3.9
Industry, utility, defense[b]	24,500	3.6	1,406	18.7
Public assembly	17,500	2.5	286	3.8
Institutional	12,500	1.8	43	0.6
Educational	9,000	1.3	116	1.5

Source: Reprinted from *Fire Journal*® (Vol. 84, No. 5), Copyright ©1990, National Fire Protection Association. Based on data reported by fire departments responding to the 1989 National Fire Experience Survey. In addition to the structure fires and losses above, there were 1,427,000 nonstructure fires with $1,137,000,000 loss.
[a]Includes mobile homes.
[b]Incidents for these property uses handled by private fire brigades or fixed suppression systems are not included.

Accidental Deaths and Death Rates by Age, 1903-1990

Year	All Ages	Under 5 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65-74 Years	75 Years and Over[a]
				DEATHS				
1903	70,600	9,400	8,200	10,300	20,100	12,600	10,000	
1904	71,500	9,700	9,000	10,500	19,900	12,500	9,900	
1905	70,900	9,800	8,400	10,600	19,600	12,600	9,900	
1906	80,000	10,000	8,400	13,000	24,000	13,600	11,000	
1907	81,900	10,500	8,300	13,400	24,900	14,700	10,100	
1908	72,300	10,100	7,600	11,300	20,500	13,100	9,700	
1909	72,700	9,900	7,400	10,700	21,000	13,300	10,400	
1910	77,900	9,900	7,400	11,900	23,600	14,100	11,000	
1911	79,300	11,000	7,500	11,400	22,400	15,100	11,900	
1912	78,400	10,600	7,900	11,500	22,200	14,700	11,500	
1913	82,500	9,800	7,400	12,200	24,500	16,500	12,100	
1914	77,000	10,600	7,900	11,000	21,400	14,300	11,800	
1915	76,200	10,300	8,200	10,800	20,500	14,300	12,100	
1916	84,800	11,600	9,100	7,700	24,900	17,800	13,700	
1917	90,100	11,600	9,700	11,700	24,400	18,500	14,200	
1918	85,100	10,600	10,100	10,600	21,900	17,700	14,200	
1919	75,500	10,100	10,000	10,200	18,600	13,800	12,800	
1920	75,900	10,200	9,900	10,400	18,100	13,900	13,400	
1921	74,000	9,600	9,500	9,800	18,000	13,900	13,200	
1922	76,300	9,700	9,500	10,000	18,700	14,500	13,900	
1923	84,400	9,900	9,800	11,000	21,500	16,900	15,300	
1924	85,600	10,200	9,900	11,900	20,900	16,800	15,900	
1925	90,000	9,700	10,000	12,400	22,200	18,700	17,000	
1926	91,700	9,500	9,900	12,600	22,700	19,200	17,800	
1927	92,700	9,200	9,900	12,900	22,900	19,700	18,100	
1928	95,000	8,900	9,800	13,100	23,300	20,600	19,300	
1929	98,200	8,600	9,800	14,000	24,300	21,500	20,000	
1930	99,100	8,200	9,100	14,000	24,300	22,200	21,300	
1931	97,300	7,800	8,700	13,500	23,100	22,500	21,700	
1932	89,000	7,100	8,100	12,000	20,500	20,100	21,200	
1933	90,932	6,948	8,195	12,225	21,005	20,819	21,740	
1934	100,977	7,034	8,272	13,274	23,288	24,197	24,912	
1935	99,773	6,971	7,808	13,168	23,411	23,457	24,958	
1936	110,052	7,471	7,866	13,701	24,990	26,535	29,489	
1937	105,205	6,969	7,704	14,302	23,955	24,743	27,532	
1938	93,805	6,646	6,593	12,129	20,464	21,689	26,284	
1939	92,628	6,668	6,378	12,066	20,164	20,842	26,505	
1940	96,985	6,851	6,466	12,763	21,166	21,840	27,799	
1941	101,513	7,052	6,702	14,346	22,983	22,509	27,921	
1942	95,889	7,220	6,340	13,732	21,141	20,764	26,692	
1943	99,038	8,039	6,636	15,278	20,212	20,109	28,764	
1944	95,237	7,912	6,704	14,750	19,115	19,097	27,659	
1945	95,918	7,741	6,836	12,446	19,393	20,097	29,405	
1946	98,033	7,949	6,545	13,366	20,705	20,249	29,219	
1947	99,579	8,219	6,069	13,166	21,155	20,513	30,457	
1948[b]	98,001	8,387	5,859	12,595	20,274	19,809	31,077	
1948[b]	93,000	8,350	5,850	12,600	20,300	19,300	9,800	16,800
1949	90,106	8,469	5,539	11,522	19,432	18,302	9,924	16,918
1950	91,249	8,389	5,519	12,119	20,663	18,665	9,750	16,144
1951	95,871	8,769	5,892	12,366	22,363	19,610	10,218	16,653
1952	96,172	8,871	5,980	12,787	21,950	19,892	10,026	16,667
1953	95,032	8,678	6,136	12,837	21,422	19,479	9,927	16,553
1954	90,032	8,380	5,939	11,801	20,023	18,299	9,652	15,938
1955	93,443	8,099	6,099	12,742	29,911	19,199	9,929	16,464
1956	94,780	8,173	6,319	13,545	20,986	19,207	10,160	16,393
1957	95,307	8,423	6,454	12,973	20,949	19,495	10,076	16,937
1958	90,604	8,789	6,514	12,744	19,658	18,095	9,431	15,373
1959	92,080	8,748	6,511	13,269	19,666	18,937	9,475	15,474
1960	93,806	8,950	6,836	13,457	19,600	19,385	9,689	15,829
1961	92,249	8,622	6,717	13,431	19,273	19,134	9,452	15,620
1962	97,139	8,705	6,751	14,557	19,955	20,335	10,149	16,687
1963	100,669	8,688	6,962	15,889	20,529	21,262	10,194	17,145
1964	100,500	8,670	7,400	17,420	22,080	22,100	10,400	16,930
1965	108,004	8,586	7,391	18,688	22,228	22,900	10,430	17,781
1966	113,563	8,507	7,958	21,030	23,134	24,022	10,706	18,206

See source and footnotes on page 30.

Accidental Deaths and Death Rates by Age, 1903-1990, Cont.

Year	All Ages	Under 5 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65-74 Years	75 Years and Over[a]
1967	113,169	7,825	7,874	21,645	23,255	23,826	10,645	18,099
1968	114,864	7,263	8,369	23,012	23,684	23,896	10,961	17,679
1969	116,385	6,973	8,186	24,668	24,410	24,192	10,643	17,313
1970	114,638	6,594	8,203	24,336	23,979	24,164	10,644	16,718
1971	113,439	6,496	8,143	24,733	23,535	23,240	10,494	16,798
1972	115,448	6,142	8,242	25,762	23,852	23,658	10,446	17,346
1973	115,821	6,037	8,102	26,550	24,750	23,059	10,243	17,080
1974	104,622	5,335	7,037	24,200	22,547	20,334	9,323	15,846
1975	103,030	4,948	6,818	24,121	22,877	19,643	9,220	15,403
1976	100,761	4,692	6,308	24,316	22,399	19,000	8,823	15,223
1977	103,202	4,470	6,305	25,619	23,460	19,167	9,006	15,175
1978	105,561	4,766	6,118	26,622	25,024	18,774	9,072	15,185
1979	105,312	4,429	5,689	26,574	26,097	18,346	9,013	15,164
1980	105,718	4,479	5,224	26,206	26,722	18,140	8,997	15,950
1981	100,704	4,130	4,866	23,582	26,928	17,339	8,639	15,220
1982	94,082	4,108	4,504	21,306	25,135	15,907	8,224	14,898
1983	92,486	3,999	4,321	19,756	24,996	15,444	8,336	15,636
1984	92,911	3,652	4,198	19,801	25,498	15,273	8,424	16,065
1985	93,457	3,746	4,252	19,161	25,940	15,251	8,583	16,524
1986	95,277	3,843	4,226	19,975	27,201	14,733	8,499	16,800
1987	95,020	3,871	4,198	18,695	27,484	14,807	8,686	17,279
1988	97,100	3,794	4,215	18,507	28,279	15,177	8,971	18,157
1989	95,500	3,700	4,100	16,600	28,700	15,600	8,800	18,000
1990	93,500	3,300	3,800	16,400	27,900	15,300	8,800	18,000
				Changes in Deaths				
1980 to 1990	**-12%**	**-26%**	**-27%**	**-37%**	**+4%**	**-16%**	**-2%**	**+13%**
1989 to 1990	**- 2%**	**-11%**	**- 7%**	**- 1%**	**-3%**	**- 2%**	**0%**	**0%**
	Index			**DEATH RATES[c]**				
1903	98.7	87.2	98.7	46.8	65.0	87.4	111.7	299.8
1904	103.2	86.6	99.1	50.9	64.9	84.6	108.1	290.0
1905	98.2	84.2	98.6	47.0	64.1	81.4	106.2	282.5
1906	114.5	93.2	99.1	46.5	77.1	97.3	111.7	306.0
1907	114.4	93.6	102.7	45.5	78.0	98.8	117.8	274.2
1908	100.0	81.2	97.5	41.2	64.4	79.5	102.2	256.7
1909	97.0	80.1	4.2	39.6	59.9	79.6	101.0	268.2
1910	103.1	84.4	92.8	39.1	65.3	87.3	104.0	276.0
1911	103.6	84.7	101.9	39.3	62.1	81.4	108.7	292.1
1912	100.0	82.5	97.1	40.5	62.3	79.2	103.2	275.8
1913	103.4	85.5	88.4	37.4	65.2	85.6	112.5	281.7
1914	95.1	78.6	94.3	38.9	58.5	73.2	94.6	268.1
1915	91.1	76.7	90.8	39.7	57.3	69.0	92.4	268.8
1916	100.6	84.1	101.4	43.3	40.8	82.5	112.1	297.6
1917	105.4	88.2	108.4	45.3	62.1	79.8	113.8	301.2
1918	100.1	82.1	91.0	46.5	58.7	72.2	106.3	294.2
1919	87.2	71.9	87.2	45.9	55.3	60.1	81.8	262.0
1920	86.3	71.2	87.4	44.9	55.5	56.9	85.6	289.5
1921	82.5	68.4	80.8	42.4	51.4	55.5	79.4	259.8
1922	84.7	69.4	80.6	41.5	51.4	57.1	81.4	265.1
1923	92.2	75.7	82.0	42.4	55.6	64.5	92.6	282.8
1924	91.1	75.6	82.9	42.4	58.6	61.7	90.2	283.5
1925	94.6	78.4	78.6	42.3	59.7	64.7	97.8	293.9
1926	95.1	78.7	77.9	41.4	59.9	65.4	98.2	298.7
1927	94.8	78.4	75.9	41.0	60.2	65.2	98.0	295.4
1928	91.4	79.3	74.4	40.4	59.9	65.6	99.9	306.2
1929	98.1	80.8	73.3	40.0	63.1	67.7	102.1	308.9
1930	97.9	80.5	71.8	36.9	62.3	67.0	102.9	317.9
1931	95.1	78.5	69.9	35.2	59.7	63.0	102.1	313.3
1932	86.1	71.3	65.1	32.8	52.7	55.6	89.3	296.9
1933	86.9	72.4	65.5	33.4	53.6	56.3	90.8	295.3
1934	95.4	79.9	68.1	33.9	57.8	61.8	103.3	328.5
1935	93.0	76.4	68.5	32.2	56.9	61.6	98.0	319.8
1936	101.5	85.9	74.4	32.9	58.8	65.3	108.6	367.4
1937	95.5	81.7	69.6	32.7	60.9	62.1	99.3	333.4
1938	84.0	72.3	65.3	28.5	51.3	52.5	85.4	308.9
1939	81.4	70.8	62.9	28.2	50.7	51.2	81.0	300.0
1940	84.1	73.4	64.8	28.8	53.5	53.2	83.4	305.7

See source and footnotes on page 30.

Accidental Deaths and Death Rates by Age, 1903-1990, Cont.

Year	Index	All Ages	Under 5 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65-74 Years	75 Years and Over[a]
1941	86.7	76.3	65.0	29.7	60.9	57.2	84.8	297.4	
1942	81.0	71.6	63.9	27.9	59.8	52.4	77.1	275.5	
1943	82.9	73.8	66.9	29.0	69.7	50.3	73.6	287.8	
1944	80.2	71.7	63.2	29.1	72.9	48.9	68.9	268.6	
1945	80.0	72.4	59.8	29.5	64.5	50.5	71.6	277.6	
1946	77.8	70.0	60.2	28.1	61.7	48.8	70.9	267.9	
1947	76.9	69.4	57.4	25.8	59.6	49.0	70.6	270.7	
1948[b]	73.9	67.1	56.3	24.6	56.8	46.2	66.8	267.4	
1948[b]	70.4	63.7	56.0	24.5	56.8	46.2	65.1	122.4	464.3
1949	66.7	60.6	54.4	23.0	52.2	43.5	60.6	120.4	450.7
1950	66.6	60.3	51.4	22.6	55.0	45.6	60.5	115.8	414.7
1951	69.0	62.5	50.8	23.6	57.7	49.0	62.7	117.1	413.6
1952	68.4	61.8	51.5	22.5	60.9	47.7	62.7	111.1	399.8
1953	66.6	60.1	49.5	22.1	61.4	46.4	60.5	106.7	383.6
1954	61.9	55.9	46.7	20.5	56.4	43.0	55.9	100.7	354.4
1955	63.2	56.9	43.9	20.7	60.1	44.7	57.7	100.8	350.2
1956	63.3	56.6	43.3	20.2	63.3	44.7	56.7	100.6	335.6
1957	62.2	55.9	43.5	19.9	59.5	44.6	56.6	97.5	333.3
1958	58.1	52.3	44.5	19.6	56.2	42.0	51.7	89.3	292.6
1959	58.1	52.2	43.6	18.9	56.5	42.1	53.2	87.7	284.7
1960	58.0	52.1	44.0	19.1	55.6	42.0	53.6	87.6	281.4
1961	56.1	50.4	42.0	18.1	54.0	41.2	52.1	83.8	267.9
1962	58.1	52.3	42.6	18.0	55.0	42.7	54.6	88.5	277.7
1963	59.5	53.4	42.8	18.2	57.2	44.0	56.3	87.9	277.0
1964	61.4	54.9	43.1	19.1	59.9	47.3	57.6	88.9	263.9
1965	62.3	55.8	43.4	18.7	61.6	47.7	58.8	88.5	268.7
1966	64.8	58.1	44.4	19.9	66.9	49.6	60.7	89.8	267.4
1967	64.0	57.3	42.2	19.4	66.9	49.7	59.2	88.5	257.4
1968	64.3	57.6	40.6	20.5	69.2	50.1	58.5	90.2	244.0
1969	64.6	57.8	40.2	20.0	71.8	51.2	58.4	86.6	232.0
1970	62.5	56.2	38.4	20.1	68.0	49.8	57.6	85.2	219.6
1971	60.7	54.8	37.7	20.1	66.1	48.4	54.7	82.7	213.2
1972	60.7	55.2	35.9	20.6	67.6	47.5	55.2	80.8	214.2
1973	60.1	54.8	35.8	20.6	68.2	48.0	53.3	77.3	206.3
1974	53.5	49.0	32.4	18.2	60.9	42.7	46.7	68.7	186.7
1975	52.0	47.8	30.7	17.8	59.5	42.3	44.9	66.2	175.5
1976	50.1	46.3	30.0	16.7	58.9	40.3	43.2	62.0	168.4
1977	50.6	47.0	28.7	17.0	61.3	40.9	43.4	61.5	164.0
1978	51.2	47.5	30.3	16.9	63.1	42.3	42.4	60.5	159.7
1979	50.4	46.9	27.6	16.1	62.6	42.7	41.3	58.8	154.8
1980	49.7	46.5	27.2	15.0	61.7	42.2	40.8	57.5	158.7
1981	46.8	43.9	24.4	14.1	56.0	41.2	38.9	54.3	147.5
1982	43.1	40.6	23.7	13.2	51.4	37.2	35.7	50.8	140.2
1983	41.7	39.5	22.7	12.7	48.5	35.9	34.6	50.5	143.1
1984	41.4	39.3	20.5	12.4	49.4	35.5	34.1	50.3	143.0
1985	41.2	39.1	20.8	12.5	48.4	35.2	33.9	50.5	143.3
1986	41.6	39.5	21.2	12.5	51.2	35.9	32.7	49.0	141.9
1987	41.0	39.0	21.2	12.3	48.9	35.4	32.7	49.1	142.0
1988	41.4	39.7	20.6	12.2	49.5	35.8	33.0	50.1	145.6
1989	40.3	38.7	19.7	11.7	45.5	35.7	33.6	48.4	140.6
1990	39.1	37.5	17.5	10.8	44.7	34.6	32.7	48.2	139.9
Changes in Rates									
1980 to 1990	**-21%**	**-19%**	**-36%**	**-28%**	**-28%**	**-18%**	**-20%**	**-16%**	**-12%**
1989 to 1990	**- 3%**	**- 3%**	**-11%**	**- 8%**	**- 2%**	**- 3%**	**- 3%**	[d]	[d]
1990 Population (millions)									
Total		**249.47**	**18.85**	**35.34**	**36.69**	**80.73**	**46.72**	**18.27**	**12.87**
Male		121.58	9.65	18.10	18.55	40.16	22.42	8.13	4.57
Female		127.89	9.20	17.24	18.14	40.57	24.30	10.14	8.30

Source: 1903 to 1932 based on National Center for Health Statistics data for registration states; 1933-1948 (5th Revn.), 1949-1963, 1965-1988 are NCHS totals. All other figures are National Safety Council estimates: 1990 preliminary, 1989 revised. See page 21 for comparability.

[a] Includes "age unknown." In 1988 these deaths numbered 132.

[b] In 1948, a revision was made in the International List of Causes of Death. The first figures for 1948 are comparable with those for earlier years, the second with those for later years.

[c] Rates are deaths per 100,000 resident population in each age group. The All Ages crude rates are based on U.S. Census Bureau figures. The index numbers (1912 = 100.0) are based on rates standardized for age (base 1940) to remove the influence of changes in age distribution between 1903 and 1990.

[d] Decreased less than 0.5 per cent.

Principal Types of Accidental Deaths, 1903-1990

Year	Motor-Vehicle	Falls	Drowning[a]	Fires, Burns[b]	Ingest. of Food, Object	Firearms	Poison (solid, liquid)	Poison by Gas
				DEATHS				
1903	(c)	(c)	9,200	(c)	(c)	2,500	(c)	(c)
1904	(c)	(c)	9,300	(c)	(c)	2,800	(c)	(c)
1905	(c)	(c)	9,300	(c)	(c)	2,000	(c)	(c)
1906	400	(c)	9,400	(c)	(c)	2,100	(c)	(c)
1907	700	(c)	9,000	(c)	(c)	1,700	(c)	(c)
1908	800	(c)	9,300	(c)	(c)	1,900	(c)	(c)
1909	1,300	(c)	8,500	(c)	(c)	1,600	(c)	(c)
1910	1,900	(c)	8,700	(c)	(c)	1,900	(c)	(c)
1911	2,300	(c)	9,000	(c)	(c)	2,100	(c)	(c)
1912	3,100	(c)	8,600	(c)	(c)	2,100	(c)	(c)
1913	4,200	15,100	10,300	8,900	(c)	2,400	3,200	(c)
1914	4,700	15,000	8,700	9,100	(c)	2,300	3,300	(c)
1915	6,600	15,000	8,600	8,400	(c)	2,100	2,800	(c)
1916	8,200	15,200	8,900	9,500	(c)	2,200	2,900	(c)
1917	10,200	15,200	7,600	10,800	(c)	2,300	2,800	(c)
1918	10,700	13,200	7,000	10,200	(c)	2,500	2,700	(c)
1919	11,200	11,900	9,100	9,100	(c)	2,800	3,100	(c)
1920	12,500	12,600	6,100	9,300	(c)	2,700	3,300	(c)
1921	13,900	12,300	7,800	7,500	(c)	2,800	2,900	(c)
1922	15,300	13,200	7,000	8,300	(c)	2,900	2,800	(c)
1923	18,400	14,100	6,800	9,100	(c)	2,900	2,800	2,700
1924	19,400	14,700	7,400	7,400	(c)	2,900	2,700	2,900
1925	21,900	15,500	7,300	8,600	(c)	2,800	2,700	2,800
1926	23,400	16,300	7,500	8,800	(c)	2,800	2,600	3,200
1927	25,800	16,500	8,100	8,200	(c)	3,000	2,600	2,700
1928	28,000	17,000	8,600	8,400	(c)	2,900	2,800	2,800
1929	31,200	17,700	7,600	8,200	(c)	3,200	2,600	2,800
1930	32,900	18,100	7,500	8,100	(c)	3,200	2,600	2,500
1931	33,700	18,100	7,600	7,100	(c)	3,100	2,600	2,100
1932	29,500	18,600	7,500	7,100	(c)	3,000	2,200	2,100
1933	31,363	18,962	7,158	6,781	(c)	3,014	2,135	1,633
1934	36,101	20,725	7,077	7,456	(c)	3,033	2,148	1,643
1935	36,369	21,378	6,744	7,253	(c)	2,799	2,163	1,654
1936	38,089	23,562	6,659	7,939	(c)	2,817	2,177	1,665
1937	39,643	22,544	7,085	7,214	(c)	2,576	2,190	1,675
1938	32,582	23,239	6,881	6,491	(c)	2,726	2,077	1,428
1939	32,386	23,427	6,413	6,675	(c)	2,618	1,963	1,440
1940	34,501	23,356	6,202	7,521	(c)	2,375	1,847	1,583
1941	39,969	22,764	6,389	6,922	(c)	2,396	1,731	1,464
1942	28,309	22,632	6,696	7,901	(c)	2,678	1,607	1,741
1943	23,823	24,701	7,115	8,726	921	2,282	1,745	2,014
1944	24,282	22,989	6,511	8,372	896	2,392	1,993	1,860
1945	28,076	23,847	6,624	7,949	897	2,385	1,987	2,120
1946	33,411	23,109	6,442	7,843	1,076	2,801	1,961	1,821
1947	32,697	24,529	6,885	8,033	1,206	2,439	1,865	1,865
1948 (5th Revn.)[d]	32,259	24,836	6,428	7,743	1,315	2,191	1,753	2,045
1948 (6th Revn.)[d]	32,259	22,000	6,500	6,800	1,299	2,330	1,600	2,020
1949	31,701	22,308	6,684	5,982	1,341	2,326	1,634	1,617
1950	34,763	20,783	6,131	6,405	1,350	2,174	1,584	1,769
1951	36,996	21,376	6,489	6,788	1,456	2,247	1,497	1,627
1952	37,794	20,945	6,601	6,922	1,434	2,210	1,440	1,397
1953	37,955	20,631	6,770	6,579	1,603	2,277	1,391	1,223
1954	35,586	19,771	6,334	6,083	1,627	2,271	1,339	1,223
1955	38,426	20,192	6,344	6,352	1,608	2,120	1,431	1,163
1956	39,628	20,282	6,263	6,405	1,760	2,202	1,422	1,213
1957	38,702	20,545	6,613	6,269	2,043	2,369	1,390	1,143
1958	36,981	18,248	6,582[e]	7,291[e]	2,191[e]	2,172	1,429	1,187
1959	37,910	18,774	6,434	6,898	2,189	2,258	1,661	1,141
1960	38,137	19,023	6,529	7,645	2,397	2,334	1,679	1,253
1961	38,091	18,691	6,525	7,102	2,499	2,204	1,804	1,192
1962	40,804	19,589	6,439	7,534	1,813	2,092	1,833	1,376
1963	43,564	19,335	6,347	8,172	1,949	2,263	2,061	1,489
1964	47,700	18,941	6,709	7,379	1,865	2,275	2,100	1,360
1965	49,163	19,984	6,799	7,347	1,836	2,344	2,110	1,526
1966	53,041	20,066	7,084	8,084	1,831	2,558	2,283	1,648

See source and footnotes on page 33.

Principal Types of Accidental Deaths, 1903-1990, Cont.

Year	Motor-Vehicle	Falls	Drowning[a]	Fires, Burns[b]	Ingest. of Food, Object	Firearms	Poison (solid, liquid)	Poison by Gas
1967	52,924	20,120	7,076	7,423	1,980	2,896	2,506	1,574
1968	54,862	18,651	7,372[c]	7,335[c]	3,100[c]	2,394[c]	2,583	1,526
1969	55,791	17,827	7,699	7,163	3,712	2,309	2,967	1,549
1970	54,633	16,926	7,860	6,718	2,753	2,406	3,679	1,620
1971	54,381	16,755	7,396	6,776	2,877	2,360	3,710	1,646
1972	56,278	16,744	7,586	6,714	2,830	2,442	3,728	1,690
1973	55,511	16,506	8,725	6,503	3,013	2,618	3,683	1,652
1974	46,402	16,339	7,876	6,236	2,991	2,513	4,016	1,518
1975	45,853	14,896	8,000	6,071	3,106	2,380	4,694	1,577
1976	47,038	14,136	6,827	6,338	3,033	2,059	4,161	1,569
1977	49,510	13,773	7,126	6,357	3,037	1,982	3,374	1,596
1978	52,411	13,690	7,026	6,163	3,063	1,806	3,035	1,737
1979	53,524	13,216	6,872	5,991	3,243	2,004	3,165	1,472
1980	53,172	13,294	7,257	5,822	3,249	1,955	3,089	1,242
1981	51,385	12,628	6,277	5,697	3,331	1,871	3,243	1,280
1982	45,779	12,077	6,351	5,210	3,254	1,756	3,474	1,259
1983	44,452	12,024	6,353	5,028	3,387	1,695	3,382	1,251
1984	46,263	11,937	5,388	5,010	3,541	1,668	3,808	1,103
1985	45,901	12,001	5,316	4,938	3,551	1,649	4,091	1,079
1986	47,865	11,444	5,700	4,835	3,692	1,452	4,731	1,009
1987	48,290	11,733	5,100	4,710	3,688	1,440	4,415	900
1988	49,078	12,096	4,966	4,965	3,805	1,501	5,353	873
1989	47,100	12,300	5,000	4,700	3,700	1,600	5,800	900
1990	46,300	12,400	5,200	4,300	3,200	1,400	5,700	800
Changes in Deaths								
1980 to 1990	**-13%**	**-7%**	**-28%**	**-26%**	**- 2%**	**-28%**	**+85%**	**-36%**
1989 to 1990	**- 2%**	**+1%**	**+ 4%**	**- 9%**	**-14%**	**-13%**	**- 2%**	**-11%**
DEATH RATES per 100,000 Population								
1903	(c)	(c)	11.4	(c)	(c)	3.1	(c)	(c)
1904	(c)	(c)	11.3	(c)	(c)	3.4	(c)	(c)
1905	(c)	(c)	11.1	(c)	(c)	2.4	(c)	(c)
1906	0.5	(c)	11.0	(c)	(c)	2.4	(c)	(c)
1907	0.8	(c)	10.4	(c)	(c)	2.0	(c)	(c)
1908	0.9	(c)	10.5	(c)	(c)	2.1	(c)	(c)
1909	1.4	(c)	9.4	(c)	(c)	1.8	(c)	(c)
1910	2.0	(c)	9.4	(c)	(c)	2.1	(c)	(c)
1911	2.5	(c)	9.6	(c)	(c)	2.2	(c)	(c)
1912	3.3	(c)	9.0	(c)	(c)	2.2	(c)	(c)
1913	4.4	15.5	10.6	9.1	(c)	2.5	3.3	(c)
1914	4.8	15.1	8.8	9.1	(c)	2.3	3.3	(c)
1915	6.6	14.9	8.6	8.4	(c)	2.1	2.8	(c)
1916	8.1	14.9	8.7	9.3	(c)	2.2	2.8	(c)
1917	10.0	14.7	7.4	10.5	(c)	2.2	2.7	(c)
1918	10.3	12.8	6.8	9.9	(c)	2.4	2.6	(c)
1919	10.7	11.4	6.9	8.7	(c)	2.7	3.0	(c)
1920	11.7	11.8	5.7	8.7	(c)	2.5	3.1	(c)
1921	12.9	11.3	7.2	6.9	(c)	2.6	2.7	(c)
1922	13.9	12.0	6.4	7.5	(c)	2.6	2.5	(c)
1923	16.5	12.6	6.1	8.1	(c)	2.6	2.5	2.4
1924	17.1	12.9	6.5	8.4	(c)	2.5	2.4	2.5
1925	19.1	13.4	6.3	7.4	(c)	2.4	2.3	2.4
1926	20.1	13.9	6.4	7.5	(c)	2.4	2.2	2.7
1927	21.8	13.9	6.8	6.9	(c)	2.5	2.2	2.3
1928	23.4	14.1	7.1	7.0	(c)	2.4	2.3	2.3
1929	25.7	14.5	6.2	6.7	(c)	2.6	2.1	2.3
1930	26.7	14.7	6.1	6.6	(c)	2.6	2.1	2.0
1931	27.2	14.6	6.1	5.7	(c)	2.5	2.1	1.7
1932	23.6	14.9	6.0	5.7	(c)	2.4	1.8	1.7
1933	25.0	15.1	5.7	5.4	(c)	2.4	1.7	1.3
1934	28.6	16.4	5.6	5.9	(c)	2.4	1.7	1.3
1935	28.6	16.8	5.3	5.7	(c)	2.2	1.7	1.3
1936	29.7	18.4	5.2	6.2	(c)	2.2	1.7	1.3
1937	30.8	17.5	5.5	5.6	(c)	2.0	1.7	1.3
1938	25.1	17.9	5.3	5.0	(c)	2.1	1.6	1.1
1939	24.7	17.9	4.9	5.1	(c)	2.0	1.5	1.1
1940	26.1	17.7	4.7	5.7	(c)	1.8	1.4	1.2

See source and footnotes on page 33.

Principal Types of Accidental Deaths, 1903-1990, Cont.

Year	Motor-Vehicle	Falls	Drowning[a]	Fires, Burns[b]	Ingest. of Food, Object	Firearms	Poison (solid, liquid)	Poison by Gas
1941	30.0	17.1	4.8	5.2	[c]	1.8	1.3	1.1
1942	21.1	16.9	5.0	5.9	[c]	2.0	1.2	1.3
1943	17.8	18.4	5.3	6.5	0.7	1.7	1.3	1.5
1944	18.3	17.3	4.9	6.3	0.7	1.8	1.5	1.4
1945	21.2	18.0	5.0	6.0	0.7	1.8	1.5	1.6
1946	23.9	16.5	4.6	5.6	0.8	2.0	1.4	1.3
1947	22.8	17.1	4.8	5.6	0.8	1.7	1.3	1.3
1948 (5th Revn.)[d]	22.1	17.0	4.4	5.3	0.9	1.5	1.2	1.4
1948 (6th Revn.)	22.1	15.1	4.5	4.7	0.9	1.6	1.1	1.4
1949	21.3	15.0	4.5	4.0	0.9	1.6	1.1	1.1
1950	23.0	13.7	4.1	4.2	0.9	1.4	1.1	1.2
1951	24.1	13.9	4.2	4.4	1.0	1.5	1.0	1.1
1952	24.3	13.5	4.2	4.5	0.9	1.4	0.9	0.9
1953	24.0	13.0	4.3	4.2	1.0	1.4	0.9	0.8
1954	22.1	12.3	3.9	3.8	1.0	1.4	0.8	0.8
1955	23.4	12.3	3.9	3.9	1.0	1.3	0.9	0.7
1956	23.7	12.1	3.7	3.8	1.1	1.3	0.8	0.7
1957	22.7	12.1	3.9	3.7	1.2	1.4	0.8	0.7
1958	21.3	10.5	3.8[e]	4.2[e]	1.3[e]	1.3	0.8	0.7
1959	21.5	10.6	3.7	3.9	1.2	1.3	0.9	0.7
1960	21.2	10.6	3.6	4.3	1.3	1.3	0.9	0.7
1961	20.8	10.2	3.6	3.9	1.4	1.2	1.0	0.7
1962	22.0	10.5	3.5	4.1	1.0	1.1	1.0	0.7
1963	23.1	10.3	3.4	4.3	1.0	1.2	1.1	0.8
1964	25.0	9.9	3.5	3.9	1.0	1.2	1.1	0.7
1965	25.4	10.3	3.5	3.8	1.0	1.2	1.1	0.8
1966	27.1	10.3	3.6	4.8	0.9	1.3	1.2	0.8
1967	26.8	10.2	3.6	3.8	1.0	1.5	1.3	0.8
1968	27.5	9.4	3.7[e]	3.7[e]	1.6[e]	1.2[e]	1.3	0.8
1969	27.7	8.9	3.8	3.6	1.8	1.2	1.5	0.8
1970	26.8	8.3	3.9	3.3	1.4	1.2	1.8	0.8
1971	26.3	8.1	3.6	3.3	1.4	1.1	1.8	0.8
1972	26.9	8.0	3.6	3.2	1.4	1.2	1.8	0.8
1973	26.3	7.8	4.1	3.1	1.4	1.2	1.7	0.8
1974	21.8	7.7	3.7	2.9	1.4	1.2	1.8	0.7
1975	21.3	6.9	3.7	2.8	1.4	1.1	2.2	0.7
1976	21.6	6.5	3.1	2.9	1.4	0.9	1.9	0.7
1977	22.5	6.3	3.2	2.9	1.4	0.9	1.5	0.7
1978	23.6	6.2	3.2	2.8	1.4	0.8	1.4	0.8
1979	23.8	5.9	3.1	2.7	1.4	0.9	1.4	0.7
1980	23.4	5.9	3.2	2.6	1.4	0.9	1.4	0.5
1981	22.4	5.5	2.7	2.5	1.5	0.8	1.4	0.6
1982	19.7	5.2	2.7	2.2	1.4	0.8	1.4	0.5
1983	19.0	5.1	2.7	2.1	1.4	0.7	1.4	0.5
1984	19.6	5.0	2.3	2.1	1.5	0.7	1.6	0.5
1985	19.2	5.0	2.2	2.1	1.5	0.7	1.7	0.5
1986	19.9	4.7	2.4	2.0	1.5	0.6	2.0	0.4
1987	19.8	4.8	2.1	1.9	1.5	0.6	1.8	0.4
1988	20.1	4.9	2.0	2.0	1.6	0.6	2.2	0.4
1989	19.1	5.0	2.0	1.9	1.5	0.6	2.3	0.4
1990	18.6	5.0	2.1	1.7	1.3	0.6	2.3	0.3
Changes in Rates								
1980 to 1990	**-21%**	**-15%**	**-34%**	**-35%**	**- 7%**	**-33%**	**+64%**	**-40%**
1989 to 1990	**- 3%**	**0%**	**+ 5%**	**-11%**	**-13%**	**0%**	**0%**	**-25%**

Source: National Center for Health Statistics and National Safety Council. See page 21 for comparability.

[a] Includes drowning in water transport accidents.

[b] Includes burns by fire, and deaths resulting from conflagration regardless of nature of injury.

[c] Comparable data not available.

[d] In 1948, a revision was made in the International List of Causes of Death. The first figures for 1948 are comparable with those for earlier years, the second with those for later years.

[e] Data are not comparable to previous years shown due to classification changes in 1958 and 1968.

WORK ACCIDENTS, 1990

Between 1912 and 1990, accidental work deaths per 100,000 population were reduced 81 per cent, from 21 to 4. In 1912, an estimated 18,000 to 21,000 workers' lives were lost. In 1990, in a work force more than triple in size and producing 11 times the goods and services, there were only 10,500 work deaths.

	Workers[a] (000)	Deaths	Death Rates[b]	Disabling Injuries[a]
All Industries	117,400	10,500[c]	9	1,800,000
Agriculture[d]	3,100	1,300	42[e]	120,000
Mining, quarrying[d]	700	300	43	30,000
Construction	6,400	2,100	33	210,000
Manufacturing	18,800	1,100	6	360,000
Transportation and public utilities	6,000	1,300	22	120,000
Trade[d]	27,500	1,200	4	330,000
Services[d]	37,300	1,600	4	340,000
Government	17,600	1,600	9	290,000

Source: National Safety Council estimates (rounded) based on data from the National Center for Health Statistics, state vital statistics departments (see page 16), and state industrial commissions. Numbers of workers are based on Bureau of Labor Statistics data and include persons aged 14 and over.

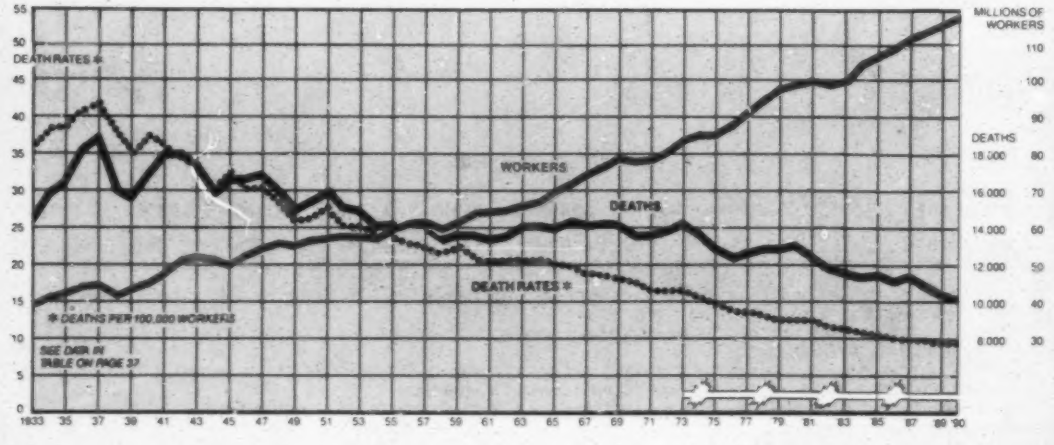
[a]See definitions on page 105. [b]Deaths per 100,000 workers in each group.

[c]About 3,600 of the deaths and 100,000 of the injuries involved motor vehicles.

[d]Agriculture includes forestry and fishing; see also page 100. Mining and quarrying includes oil and gas extraction (preliminary MSHA reports indicate 123 deaths in coal, metal, and nonmetal mining in 1990). Trade includes wholesale and retail trade. Services includes finance, insurance and real estate.

[e]Agriculture rate excludes deaths of persons under 14 years of age. Rates for other industry divisions do not require this adjustment. Deaths of persons under 14 are included in the agriculture death total.

Workers, Deaths and Death Rates


DEATH RATES *
MILLIONS OF WORKERS
DEATHS
WORKERS
DEATHS
DEATH RATES *
* DEATHS PER 100,000 WORKERS
SEE DATA IN TABLE ON PAGE 37
1933 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 '90

Work accident costs

The true cost to the nation, to employers, and to individuals of work-related deaths and injuries is much greater than the cost of workers' compensation insurance alone. The figures presented below show the National Safety Council's estimates of the total costs of occupational deaths and injuries. Uninsured costs are estimated, conservatively, to be equal to insured costs. The Council recommends, however, that each organization establish its own ratio of uninsured to insured costs through a study of its own experience. Guidance for such a study is contained in the Council's *Accident Prevention Manual.*

TOTAL COST IN 1990 ..... $63.8 billion

Includes insurance administration costs of $10.3 billion, wage losses of $10.2 billion, and medical costs of $8.7 billion. Includes uninsured costs of $29.2 billion such as the money value of time lost by workers other than those with disabling injuries, who are directly or indirectly involved in accidents, and the cost of the time required to investigate accidents, write up accident reports, etc. Also includes fire losses of $3.7 billion and damage to motor-vehicles in work accidents of $1.7 billion.

Cost per Worker $540

This figure indicates the value of goods or services each worker must produce to offset the cost of work injuries. It is *not* the average cost of a work injury.

Cost per Death $730,000

Cost per Disabling Injury $23,000

These figures include estimates of wage losses, medical expenses, insurance administration costs, and uninsured costs, and exclude property damage costs except to motor-vehicles.

Time lost because of work injuries

	DAYS LOST
TOTAL TIME LOST IN 1990	**75,000,000**
Due to Accidents in 1990	**35,000,000**

Includes primarily the actual time lost during the year from disabling injuries, except that it does not include time lost on the day of the injury or time required for further medical treatment or check-up following the injured person's return to work.

Fatalities are included at an average loss of 150 days per case, and permanent impairments are included at actual days lost plus an allowance for lost efficiency resulting from the impairment.

Not included is time lost by persons with nondisabling injuries or other persons directly or indirectly involved in accidents.

Due to Accidents in Prior Years 40,000,000

This is an indicator of the productive time lost in 1990 due to permanently disabling injuries that occurred in prior years.

TIME LOSS IN FUTURE YEARS FROM 1990 ACCIDENTS 100,000,000

Includes time lost in future years due to on-the-job deaths and permanently disabling injuries that occurred in 1990.

Deaths in work accidents

Of the 10,500 work deaths in 1990, about 41 per cent were to those aged 25 to 44 years. By type of accident, more than one third of all fatalities involved motor-vehicle accidents. Falls were the next highest type with about 13 per cent.

The table below shows the number of work deaths by age in 1990 and the per cent distribution by type of accident for the various age groups.

Work Deaths by Type of Accident and Age, 1990

Type of Accident	All Ages	Age					
		5-14	15-24	25-44	45-64	65-74	75 & Over
All Types[a]	*10,500*	*100*	*1,900*	*4,300*	*2,900*	*800*	*500*
Total[b]	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Motor-vehicle	35.5	0.0	55.0	34.0	34.5	25.0	0.0
Falls	12.7	6.0	8.1	9.1	14.3	20.8	44.4
Electric current	3.6	3.0	4.9	4.7	2.3	0.6	0.2
Fires, burns	3.5	8.0	2.9	3.4	3.2	6.0	3.6
Poison (solid, liquid)	3.4	0.0	1.2	5.7	2.3	1.8	0.0
Drowning	3.2	0.0	4.4	3.9	2.4	1.1	1.6
Air transport	2.4	0.0	0.6	3.8	2.6	0.5	0.0
Water transport	1.7	0.0	2.0	2.2	1.4	0.5	0.4
Poison (gas, vapor)	1.4	0.0	1.6	1.7	1.3	0.8	0.2
Other[c]	32.6	83.0	19.3	31.5	35.7	42.9	49.6

Source: National Safety Council estimates.
[a]All Types are 1990 estimates. [b]Per cent distribution based on 1988 data (latest year available).
[c]Principal types include machinery, struck by falling object, railway, and mechanical suffocation.

Work injuries by type of accident

About 31 per cent of all disabling work injuries result from overexertions, according to data from the Bureau of Labor Statistics 1988 Supplementary Data System (SDS) file. Injuries involving being struck by or struck against an object were the next most frequent with about 24 per cent. Per cent distributions by type of accident for major industry divisions are shown below.

The SDS file used in the tabulations includes only workers' compensation cases that involved disability from 14 states in 1988.

Work Injuries Involving Disability by Type of Accident and Industry Division, 1988

Type of Accident	All Industries	Agriculture[a,b]	Mining[b]	Construction	Manufacturing	Trans. and Pub. Util.	Trade[b]	Services[b]	Public Sector
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Overexertion	31.3	24.2	24.1	25.1	34.7	31.1	31.1	34.4	29.0
Struck by or struck against	24.0	29.4	26.9	29.0	25.2	18.6	26.7	20.0	19.6
Falls	17.1	17.3	16.0	21.9	11.7	18.3	18.1	19.1	18.1
Bodily reaction	7.6	7.2	5.9	6.6	6.8	8.3	6.9	8.1	10.3
Caught in or between[c]	5.2	6.5	10.1	4.1	8.3	4.5	4.4	3.7	2.9
Contact with radiation, caustics, etc	3.1	4.8	5.5	2.6	3.4	2.2	1.8	3.6	4.5
Motor-vehicle accident[c]	3.1	2.7	2.7	2.0	1.0	9.6	2.6	3.3	5.2
Rubbed or abraded	2.0	2.9	1.9	3.5	2.6	1.5	1.6	1.4	1.4
Contact with temperature extremes	2.0	1.1	2.1	1.8	1.8	0.8	3.3	1.6	1.6
Other, nonclassifiable	4.6	3.9	4.8	3.4	4.5	5.1	3.5	4.8	7.4

Source: Bureau of Labor Statistics Supplementary Data System, based on 1,047,055 cases involving disability from 14 states, 1988.
[a]Excludes farms with less than 11 employees.
[b]Agriculture includes forestry and fishing; mining includes quarrying and oil and gas extraction; trade includes wholesale and retail; services includes finance, insurance, and real estate.
[c]Caught in or between includes caught under. Motor-vehicle accident includes highway only.

Work Accidental Deaths and Death Rates, All Industries, 1933-1990

Year	Work Deaths	Work M-V[a]	Workers[b] (000)	Death Rate[c]	Year	Work Deaths	Work M-V[a]	Workers[b] (000)	Death Rate[c]
1933	14,500	[d]	39,000	37	1967	14,200	3,200	74,700	19
1938	16,000	[d]	42,100	38	1968	14,300	3,600	76,900	19
1943	17,500	[d]	52,200	34	1969	14,300	3,600	79,000	18
1946	16,500	[d]	52,400	31	1970	13,800	3,700	77,700	18
1947	17,000	2,500	54,900	31	1971	13,700	4,200	78,500	17
1948	16,000	2,100	56,000	29	1972	14,000	4,300	81,300	17
1949	15,000	2,200	55,200	27	1973	14,300	4,500	84,300	17
1950	15,500	2,700	56,400	27	1974	13,500	4,000	86,200	16
1951	16,000	2,800	57,450	28	1975	13,000	3,900	85,200	15
1952	15,000	2,800	57,800	26	1976	12,500	4,100	88,100	14
1953	15,000	3,100	58,050	26	1977	12,900	4,300	91,500	14
1954	14,000	2,800	57,500	24	1978	13,100	4,500	95,500	14
1955	14,200	3,000	59,400	24	1979	13,000	4,500	98,300	13
1956	14,300	3,000	61,100	23	1980	13,200	4,500	98,800	13
1957	14,200	2,900	61,300	23	1981	12,500	4,500	99,800	13
1958	13,300	2,600	59,900	22	1982	11,900	4,100	98,800	12
1959	13,800	2,800	61,300	23	1983	11,700	4,100	100,100	12
1960	13,800	2,800	64,400	21	1984	11,500	4,200	104,300	11
1961	13,500	2,600	64,500	21	1985	11,500	4,100	106,400	11
1962	13,700	2,700	65,200	21	1986	11,100	3,900	108,900	10
1963	14,200	3,000	66,200	21	1987	11,300	4,200	111,700	10
1964	14,200	3,100	67,600	21	1988	11,000	3,900	114,300	10
1965	14,100	3,000	69,700	20	1989	10,700	3,700	116,700	9
1966	14,500	3,200	72,600	20	1990	10,500	3,600	117,400	9

Source: National Safety Council estimates (1988, 1989 revised; 1990 preliminary) based on data from the National Center for Health Statistics, state departments of health, and state industrial commissions; numbers of workers are based on Bureau of Labor Statistics data.

[a]Work deaths in motor-vehicle accidents. These deaths are included in the "Work Deaths" column.

[b]Workers are all persons gainfully employed, including owners, managers, other paid employees, the self-employed, and unpaid family workers, but excluding private household workers. Due to changes in estimating procedures, the numbers of workers for 1970 and later years have been revised and are not comparable to those for earlier years.

[c]Deaths per 100,000 workers.

[d]Comparable figures not available.

Work Deaths and Death Rates by Industry Division, 1981-1990

Year	Agriculture[a]	Mining, Quarrying[a]	Construction	Manufacturing	Trans. and Pub. Util.	Trade[a]	Services[a]	Government
				DEATHS				
1981	1,900	600	2,300	1,500	1,700	1,200	1,700	1,600
1982	1,800	600	2,100	1,100	1,500	1,300	1,800	1,700
1983	1,800	500	2,100	1,200	1,500	1,200	1,800	1,600
1984	1,700	500	2,200	1,100	1,600	1,200	1,800	1,400
1985	1,600	400	2,400	1,200	1,500	1,300	1,800	1,300
1986	1,800	300	2,300	1,000	1,600	1,100	1,600	1,400
1987	1,700	300	2,100	1,000	1,500	1,200	2,000	1,500
1988	1,500	300	2,200	1,100	1,500	1,200	1,600	1,600
1989	1,300	300	2,100	1,100	1,400	1,200	1,700	1,600
1990	1,300	300	2,100	1,100	1,300	1,200	1,600	1,600
				DEATH RATES[b]				
1981	54	55	42	7	31	5	7	10
1982	52	50	40	6	28	6	7	11
1983	52	50	39	6	28	5	7	10
1984	49	50	39	6	29	5	7	9
1985	49	40	40	6	27	5	6	8
1986	55	38	37	5	29	4	5	8
1987	53	38	33	5	26	5	6	9
1988	48	38	34	6	26	4	5	9
1989	40	43	32	6	24	4	5	9
1990	42	43	33	6	22	4	4	9

Source: National Safety Council estimates (1988, 1989 revised; 1990 preliminary) based on data from the National Center for Health Statistics, state departments of health, state industrial commissions, and the Bureau of Labor Statistics.

[a]Agriculture includes forestry and fishing; see also page 100. Mining and quarrying includes oil and gas extraction. Trade includes wholesale and retail trade. Services includes finance, insurance and real estate.

[b]Deaths per 100,000 workers in each industry group. Agriculture rate excludes deaths of persons under 14 years of age. Rates for other industries do not require this adjustment. Deaths of persons under 14 are included in the agriculture death total.

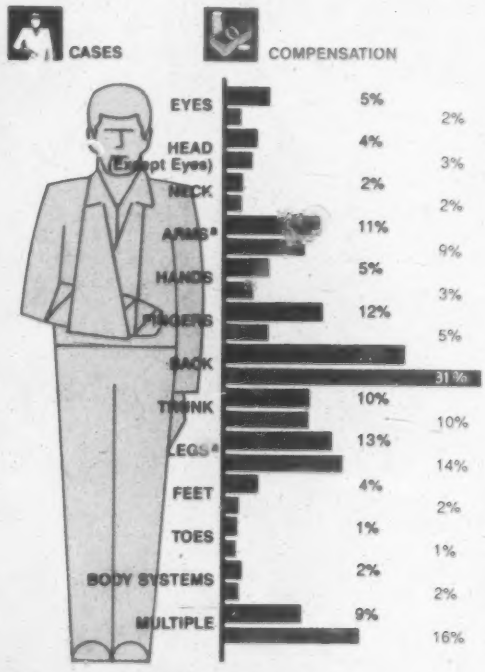
Worker deaths and injuries on and off the job

Three out of four deaths, and more than half of the injuries suffered by workers in 1990 occurred off the job. The ratios of off-the-job deaths and injuries to on-the-job were 3.5 to 1 and 1.6 to 1, respectively. Production time lost due to off-the-job accidents totaled about 60,000,000 days in 1990, compared with 35,000,000 days lost by workers injured on the job. Production time lost in future years due to off-the-job accidents in 1990 will total an estimated 280,000,000 days, almost three times the 100,000,000 days lost in future years from on-the-job accidents. Off-the-job accidents to workers cost the nation at least $56.8 billion in 1990.

Place	Deaths 1990	Deaths 1989	Disabling Injuries 1990	1990 Rates[a] Deaths	1990 Rates[a] Injuries
On and Off the Job	**47,300**	**48,200**	**4,600,000**	**.07**	**6.6**
On the Job	**10,500**	**10,700**	**1,800,000**	**.04**	**7.1**
Off the Job	**36,800**	**37,500**	**2,800,000**	**.08**	**6.2**
Motor-vehicle	23,200	23,700	900,000	.49	19.2
Public nonmotor-vehicle	6,900	6,900	900,000	.10	12.4
Home	6,700	6,900	1,000,000	.02	3.0

Source: National Safety Council estimates. Procedures for allocating the time spent on and off the job were revised for the 1990 edition. Death and injury rates are not comparable to rate estimates prior to that edition.
[a]Per 1,000,000 hours exposure, by place.

Part of body injured in work accidents



Source: State Labor Departments, 1989-1990; cases—23 states, compensation—10 states.
[a]Includes multiple or NEC extremity injuries amounting to less than 2 per cent of the total cases and compensation.

Disabling work injuries in the entire nation totaled approximately 1,800,000 in 1990. Of these, about 10,500 were fatal and 60,000 resulted in some permanent impairment.

Injuries to the back occurred most frequently, followed by leg injuries and thumb and finger injuries, according to state labor department reports. See pages 35 and 41 for other compensation figures.

Eyes	**90,000**
Head (except eyes)	**70,000**
Neck	**30,000**
Arms[a]	**200,000**
Hands	**90,000**
Fingers	**220,000**
Back	**400,000**
Trunk	**180,000**
Legs[a]	**230,000**
Feet	**70,000**
Toes	**20,000**
Body Systems	**40,000**
Multiple	**160,000**

Occupational fatality estimates

The three commonly cited estimates of occupational fatalities are significantly different from each other in terms of what is counted, the population covered, data sources, and methods. To use them properly, it is necessary to understand their differences. A new system has the potential to produce an accurate and reliable count.

National Safety Council[a]. The Council's estimate, 10,500 for 1990, covers unintentional injury deaths (ICD underlying cause of death codes E800–E949) of persons in the public and private civilian work force, age 14 and over, who were wage or salary workers (excluding private household workers), self-employed, or unpaid family workers. The nonmotor-vehicle portion of the most recent (1988) National Center for Health Statistics (NCHS) death certificate tabulation by external cause and age group was apportioned into three major classes—work, home, and public—using factors determined from special studies. An estimate of the work-motor-vehicle duplication was added to obtain total work-related deaths. Because the NCHS tabulations were for 1988, state vital statistics and workers' compensation data were used to bring the estimates up to the current year using the link relative technique.

Bureau of Labor Statistics[b]. The BLS estimate, 3,600 for 1989, covers deaths due to injuries and illnesses that result from a work accident or an exposure in the work environment in private sector employers with 11 or more employees (about two thirds of the total workforce). The estimate was obtained through a survey of about 280,000 establishments stratified by industry and employment size category. BLS believes that the annual survey significantly understates the number of work-related fatalities.

National Institute for Occupational Safety and Health[c]. The NIOSH estimate, about 6,400 in 1985, covers traumatic injuries (intentional and unintentional) of persons 16 years of age and older. It was made by counting death certificates obtained directly from the states using three criteria: (a) injury as an immediate, underlying or contributing cause of death (ICD codes E800–E999), (b) 16 years of age or older, and (c) a positive response to the "injury at work" item on the death certificate. Both the Council and NIOSH estimates rely on the accuracy with which the death certificate is completed. It is well known that not all work-related fatalities can be identified with death certificates alone, or even in combination with workers' compensation reports[d].

Census of Fatal Occupational Injuries[e]. Because of the limitations of the three existing fatality estimates, the BLS has developed a plan to conduct a systematic, verifiable count of all fatal occupational injuries and to obtain descriptive data on the circumstances surrounding these events. The federal-state cooperative system uses death certificates, state and federal workers' compensation reports, OSHA/MSHA/FRA fatality reports, medical examiners' records, autopsy reports, police motor-vehicle accident records, and other sources to identify work-related deaths. Deaths are counted if two sources indicate a work relationship. The census will include the self-employed, persons under 16 years of age, workers on small farms, and government employees, among others. To ensure accuracy, descriptive data are also cross-checked between two independent sources and special inquiries are initiated when appropriate. The CFOI is in operation in about 27 states in 1991 and will be expanded nationwide in 1992.

[a]National Safety Council Statistics Department. (1982). *Documentation of National Safety Council statistics department estimating procedures for motor-vehicle, work, home, and public deaths and death rates.* Chicago: Author.

[b]Bureau of Labor Statistics. (November 14, 1990). *BLS reports on survey of occupational injuries and illnesses in 1989.* (News Release USDL-90-582). Washington, DC: U.S. Department of Labor.

[c]National Institute for Occupational Safety and Health. (September 1989). *National traumatic occupational fatalities: 1980-1985.* (DHHS(NIOSH) Publication No. 89-116). Morgantown, WV.: NIOSH, Division of Safety Research.

[d]Baker, S.P., Samkoff, J.S., Fisher, R.S., & Van Buren, C.B. (1982). Fatal occupational injuries. *The Journal of the American Medical Association, 248*(6), 692-697.

[e]Bureau of Labor Statistics. (1991). *Life-saving facts for the workplace.* Washington, D.C.: U.S. Department of Labor.

Average Workers' Compensation Payments, 1985

The table below shows the per cent distribution of closed workers' compensation cases in 9 states during 1985 by nature of injury or illness, part of body, and type of accident, and the average amount of indemnity compensation and medical payments per case. These 1985 data from the Bureau of Labor Statistics Supplementary Data System file are the latest available that include both indemnity compensation and medical payments. To inflate 1985 dollars to 1990, multiply by 1.224 (based on the all-items Consumer Price Index for all urban consumers [CPI-U]).

Category	Per Cent of Total Cases Closed[a]	Average Indemnity Compensation[b]	Average Medical Payment[b]
Total		**$4,035**	**$2,012**
Nature of Injury:			
Sprains, strains	44.7%	3,568	1,641
Fracture	12.1	4,278	2,632
Cut, laceration, puncture	10.7	1,509	1,217
Contusion, crushing, bruise	9.5	2,409	1,218
Multiple injuries	5.9	7,612	3,239
Dislocation	2.9	13,375	5,265
Hernia, rupture	2.5	1,897	2,130
Burn (heat)	1.8	2,103	2,924
Inflammation or irritation of joints, tendons, etc.	1.5	4,064	2,524
Conditions of nervous system	1.1	3,870	2,215
Hearing loss or impairment	1.0	3,161	563
Amputation or enucleation	0.8	6,290	3,141
Scratches, abrasions	0.8	1,197	698
Concussion	0.5	6,160	2,381
Burn (chemical)	0.4	1,652	1,410
Systemic poisoning	0.4	6,141	3,204
Part of Body:			
Head	5.1%	3,312	1,874
Eye	*1.1*	*2,502*	*1,164*
Neck	1.7	5,303	2,438
Upper extremities	25.6	2,234	1,382
Arm	*4.2*	*3,024*	*1,591*
Wrist	*4.4*	*2,915*	*1,538*
Hand	*4.1*	*2,114*	*1,328*
Finger	*11.7*	*1,627*	*1,150*
Trunk	37.0	4,583	2,224
Back	*26.2*	*5,193*	*2,358*
Lower extremities	20.0	2,848	1,734
Leg	*9.5*	*3,704*	*2,356*
Foot	*3.6*	*2,129*	*1,118*
Toe	*1.8*	*1,209*	*731*
Multiple	9.0	7,323	3,610
Body system	1.2	20,940	3,110
Type of Accident:			
Overexertion	32.7%	4,119	1,910
Struck by object	16.6	3,203	1,670
Fall on same level	10.8	4,777	2,212
Fall from elevation	8.2	5,991	2,637
Struck against object	8.0	2,193	1,393
Bodily reaction	7.2	3,301	1,821
Caught in, under, between	5.3	3,279	2,013
Highway motor-vehicle accidents	2.7	8,406	3,927
Nonhighway motor-vehicle accidents	0.3	4,798	3,235
Contact with temperature extremes	1.7	1,782	2,101
Contact with radiations, caustics, etc.	1.6	5,996	1,668
Exposure to noise	1.0	3,160	546
Rubbed or abraded	0.8	1,949	1,021
Explosions	0.2	6,381	7,375
Contact with electric current	0.2	10,384	5,067

Source: Bureau of Labor Statistics Supplementary Data System, based on 353,449 closed cases from 9 states, 1985.

[a]Percentages do not add to 100 because not all subcategories are shown. Group totals contain some categories not listed separately.

[b]Cases in which no indemnity compensation or medical payment was awarded are excluded when computing averages. Overall average based on 345,613 indemnity compensation cases and 101,706 medical payment cases.

Workers' Compensation Cases

According to the Social Security Administration, an estimated $30.8 billion was paid out under workers' compensation in 1988, an increase of 12 per cent from 1987. Of this total, $19.3 billion was for income benefits and $11.5 billion was for medical costs—both increases from 1987. Black Lung Program payments decreased by about 3.0 per cent to $1.5 billion. Excluding black lung payments, about 60 per cent of the total workers' compensation benefits was paid by private insurance in 1988, unchanged over the past decade. State and Federal funds and self-insurance each paid another 20 per cent. Eighty-seven per cent of all wage and salary workers, totalling about 91.3 million workers, were covered by workers' compensation—an increase of 2.9 million from 1987.

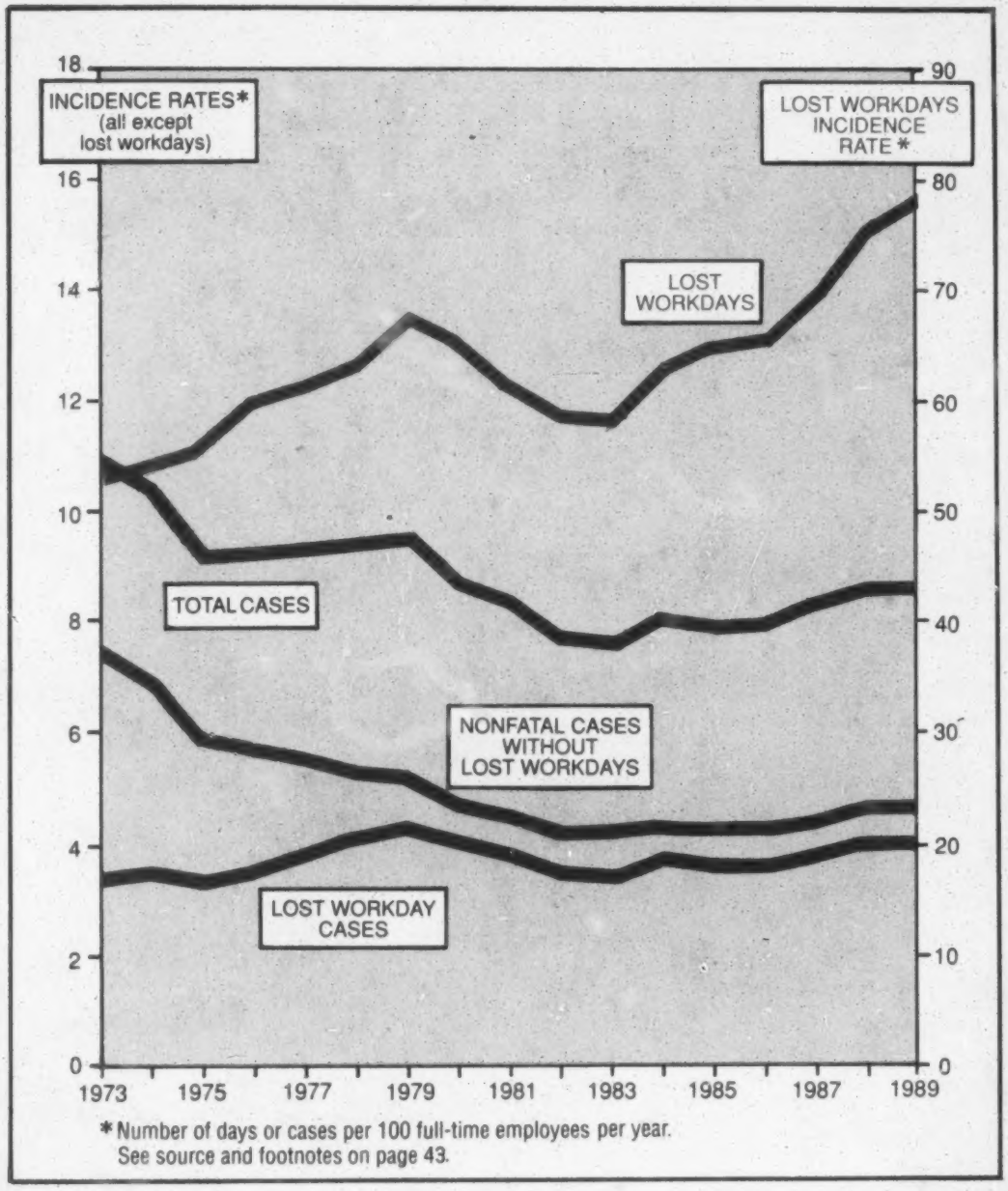
The table below shows the trend in the number of compensated or reported cases in each reporting state or province. Due to the differences in population, industries, and coverage of compensation laws, comparison between states should not be made.

State or Province	Deaths[a]			Total Cases[a]			1988 Compensation Paid ($ 000)
	1990	1989	1988	1990	1989	1988	
Alabama[b]	75	65	74	45,161	45,806	41,064	310,568
Alaska	37	32	36	33,230	33,220	27,535	119,595
Arizona	68	86	81	152,364	166,908	...	300,887
Arkansas	124	123	106	...	17,181	18,361	176,814
California	...	382	399	...	430,790	437,293	4,810,305
Connecticut	95	57	58	50,917	50,153	51,032	495,535
Florida[b]	...	267	195	...	91,142	90,515	1,421,550
Georgia	211	228	226	298,897	293,797	306,663	580,766
Hawaii	...	53	46	...	52,030	50,101	151,144
Idaho	35	41	39	42,876	39,853	37,263	84,983
Indiana	88	93	105	83,698	87,156	74,341	244,703
Iowa	69	79	93	27,276	27,239	26,059	169,464
Kansas	53	67	70	86,420	73,940	70,926	197,473
Maine	...	53	54	...	80,349	78,958	314,353
Michigan	72	76	64	...	78,631	64,111	1,010,014
Minnesota	129	142	145	57,281	56,678	54,415	501,901
Mississippi	...	137	135	...	20,575	20,176	154,799
Missouri	140	168	148	197,980	193,188	185,570	378,777
Montana[c]	35	35	25	30,044	29,734	28,638	150,436
Nebraska	53	67	66	71,300	70,996	65,158	101,311
Nevada[b]	38	46	45	91,724	87,492	79,963	236,861
New Hampshire	22	25	29	61,464	67,068	71,398	143,153
New York	745	724	829	503,096	524,287	551,776	1,344,539
North Carolina	160	139	180	82,136	75,810	73,020	334,179
Ohio	...	222	248	...	142,865	138,950	1,716,339
Oregon[b,c]	64	75	81	39,747	43,038	44,054	555,769
Pennsylvania	235	237	267	158,030	148,445	146,461	1,499,049
South Carolina[c]	139	154	93	147,576	106,152	112,527	207,909
South Dakota	10	20	...	22,260	21,197	...	40,156
Virginia[b]	82	103	77	35,058	43,146	46,522	408,904
Wisconsin	...	123	130	...	77,391	76,917	422,163
Alberta[b]	...	107[d]	124	...	58,022[d]	59,735	...
British Columbia[b]	...	175[d]	162	...	153,545[d]	147,518	...
Manitoba[b]	...	20[d]	25	...	39,204[d]	40,307	...
New Brunswick[b]	...	8[d]	72	...	41,378[d]	33,474	...
Newfoundland[b]	...	27[d]	19	...	21,646[d]	18,782	...
Northwest Territories[b]	...	8[d]	8	...	3,548[d]	3,413	...
Nova Scotia[b]	...	23[d]	28	...	48,574[d]	39,423	...
Ontario[b]	...	301[d]	283	...	417,517[d]	443,123	...
Prince Edward Island[b]	...	4[d]	0	...	4,601[d]	4,643	...
Quebec[b]	...	159[d]	119	...	251,557[d]	261,905	...
Saskatchewan[b]	...	36[d]	23	...	33,319[d]	35,915	...
Yukon[b]	...	1[d]	4	...	1,822[d]	2,000	...

Source: Deaths and cases—State and provincial workers' compensation authorities for calendar or fiscal year. States not listed did not respond to survey. Costs—*Social Security Bulletin*, 1991, 54(3), 12-20.
Definitions: *Reported case*—a reported case may or may not be work-related and may not receive compensation. *Compensated case*—a case determined to be work-related and for which compensation was paid.
[a]Reported cases involving medical and indemnity benefits, unless otherwise noted.
[b]Closed or compensated cases. [c]Medical benefit cases only. [d]Preliminary.

Trends in occupational incidence rates

The four occupational injury and illness incidence rates published by the Bureau of Labor Statistics show fluctuations over time, however trends can be detected. Rates for total OSHA recordable cases and nonfatal cases without lost workdays have generally declined since 1973, although slight increases start in 1987. Rates for lost workday cases have remained relatively unchanged overall, with slight increases starting in 1987. Rates for lost workdays have increased overall from 53.3 in 1973 to 78.7 in 1989. The chart below shows trends in the four rates from 1973 to 1989. See page 43 for definitions.



*Number of days or cases per 100 full-time employees per year.
See source and footnotes on page 43.

OSHA occupational injuries and illnesses

The tables below and on pages 44 - 46 are from the 1989 survey of occupational injuries and illnesses conducted by the Bureau of Labor Statistics, U.S. Department of Labor. These figures are *not comparable* to the National Health Interview Survey data on page 13 due to differences in definitions nor to National Safety Council estimates on pages 1, 34, and 38 due to differences in definitions and employment coverage (OSHA excludes public employees, unpaid family workers, some self-employed, and farms with less than 11 employees).

OSHA incidence rates are based on cases or days per 100 full-time workers per year using 200,000 employee hours as the equivalent. Other definitions (see below) affect which cases are counted and how they are classified.

BLS Estimates of Occupational Injury and Illness Incidence Rates by Industry Division, 1988–1989

Industry Division	Incidence Rates[c]							
	Total Cases[d]		Lost Workday Cases		Nonfatal Cases Without Lost Workdays		Lost Workdays	
	1989	1988	1989	1988	1989	1988	1989	1988
Private Sector[e]	**8.6**	**8.6**	**4.0**	**4.0**	**4.6**	**4.6**	**78.7**	**76.1**
Agriculture, forestry, and fishing[e]	10.9	10.9	5.7	5.6	5.2	5.2	100.9	101.8
Mining	8.5	8.8	4.8	5.1	3.7	3.6	137.2	152.1
Construction	14.3	14.6	6.8	6.8	7.5	7.7	143.3	142.0
Manufacturing	13.1	13.0	5.8	5.7	7.3	7.3	113.0	107.3
Transportation and public utilities	9.2	8.9	5.3	5.1	3.9	3.8	121.5	118.8
Wholesale and retail trade	8.0	7.8	3.6	3.5	4.4	4.3	63.5	60.9
Finance, insurance, and real estate	2.0	2.0	0.9	0.9	1.1	1.1	17.6	17.3
Services	5.5	5.4	2.7	2.6	2.8	2.8	51.2	48.0

See source and footnotes below.

OSHA Definitions

(See BLS *Recordkeeping Guidelines for Occupational Injuries and Illnesses*, September 1986)

Occupational injury is any injury such as a cut, fracture, sprain, amputation, etc., which results from a work accident or from a single instantaneous exposure in the work environment.

Occupational illness is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion or direct contact.

Lost workdays are those days on which, because of occupational injury or illness, the employee was away from work or limited to restricted work activity. Lost workdays—away from work, are those days on which the employee would have worked but could not because of the occupational injury or illness. Lost workdays—restricted work activity, are those days on which: (1) the employee was assigned to a temporary job, or (2) the employee worked at a permanent job less than full-time, or (3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it. The number of lost workdays (consecutive or not) should not include the day of injury or onset of illness.

Total cases include all work-related deaths and illnesses, and those work-related injuries that result in: loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid.

Nonfatal cases without lost workdays are cases that do not involve fatalities or lost workdays but result in: (1) medical treatment, other than first aid, or (2) loss of consciousness, or (3) transfer to another job, or (4) diagnosis of occupational illness.

Source and footnotes for table above and on pages 44-46.

Source: Bureau of Labor Statistics, U.S. Department of Labor, survey involving a nationwide sample of approximately 280,000 units.

[a] Industry division 2 and 3 digit SIC code totals include data for industries not shown separately.

[b] Standard Industrial Classification Manual. 1987 Edition.

[c] $\text{Incidence Rate} = \dfrac{(\text{No. of injuries \& illnesses} \times 200{,}000) \textbf{ OR } (\text{No. of lost workdays} \times 200{,}000)}{\text{Total hours worked by all employees during period covered}}$

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

[d] Includes fatalities. Because of rounding, the difference between the total and sum of the rates for lost workday cases and nonfatal cases without lost workdays may not reflect the fatality rate.

[e] Excludes farms with less than 11 employees.

BLS Estimates of Occupational Injury and Illness Incidence Rates for Selected Industries, 1989

Industry[a]	SIC Code[b]	Incidence Rates[c]			
		Total Cases[d]	Lost Workday Cases	Nonfatal Cases Without Lost Workdays	Lost Workdays
Private Sector[e]		**8.6**	**4.0**	**4.6**	**78.7**
Agriculture, forestry and fishing[e]		10.9	5.7	5.2	100.9
Agricultural production	01-02	12.2	6.2	6.0	101.9
Agricultural services	07	9.7	5.3	4.5	99.8
Forestry	08	11.4	5.6	5.7	132.4
Mining		8.5	4.8	3.7	137.2
Metal mining	10	8.5	4.7	3.8	133.0
Coal mining	12	11.6	8.3	3.2	254.8
Oil and gas extraction	13	7.6	3.8	3.9	111.7
Crude petroleum and natural gas	131	3.3	1.6	1.8	41.6
Natural gas liquids	132	4.1	1.1	3.0	28.8
Oil and gas field services	138	12.1	6.0	6.0	184.7
Nonmetallic minerals, except fuels	14	7.9	4.4	3.5	90.2
Construction		14.3	6.8	7.5	143.3
General building contractors	15	13.9	6.5	7.4	137.3
Residential building construction	152	11.4	6.1	5.3	131.7
Nonresidential building construction	154	16.9	7.2	9.7	148.1
Heavy construction, except building	16	13.8	6.5	7.3	147.1
Highway and street construction	161	14.1	6.5	7.6	139.0
Heavy construction, except highway	162	13.7	6.5	7.1	150.6
Special trade contractors	17	14.6	6.9	7.7	144.9
Plumbing, heating, air-conditioning	171	15.7	6.3	9.4	116.0
Painting and paper hanging	172	9.4	5.0	4.4	137.2
Electrical work	173	13.1	5.3	7.8	105.6
Masonry, stonework and plastering	174	16.0	8.3	7.7	179.3
Carpentry and floor work	175	13.0	7.1	5.9	134.8
Roofing, siding, and sheet metal work	176	18.3	10.0	8.3	247.1
Manufacturing		13.1	5.8	7.3	113.0
Durable goods		*14.1*	*6.0*	*8.1*	*116.5*
Lumber and wood products	24	18.4	9.4	9.1	177.5
Logging	241	19.5	11.7	7.7	307.8
Sawmills and planing mills	242	18.6	9.6	9.0	187.3
Millwork, plywood and structural members	243	17.7	8.8	8.9	151.2
Wood containers	244	16.2	9.0	7.2	180.9
Wood buildings and mobile homes	245	25.2	11.0	14.2	164.9
Furniture and fixtures	25	16.1	7.2	8.9	124.9
Household furniture	251	15.5	6.9	8.5	113.1
Office furniture	252	17.5	7.5	9.9	162.7
Public building and related furniture	253	19.6	8.5	11.0	163.5
Stone, clay, and glass products	32	15.5	7.4	8.1	149.8
Flat glass	321	21.9	7.3	14.5	116.6
Glass and glassware, pressed or blown	322	14.2	6.5	7.6	139.7
Products of purchased glass	323	16.9	6.7	10.1	120.8
Structural clay products	325	17.1	7.9	9.2	179.0
Pottery and related products	326	15.8	9.2	6.6	186.7
Concrete, gypsum, and plaster products	327	15.8	8.2	7.6	167.1
Miscellaneous nonmetallic mineral products	329	13.7	6.7	7.0	132.4
Primary metal industries	33	18.7	8.1	10.5	168.3
Blast furnace and basic steel products	331	16.7	6.8	9.8	166.8
Iron and steel foundries	332	25.4	10.8	14.7	183.6
Primary nonferrous metals	333	19.9	7.6	12.2	159.9
Nonferrous rolling and drawing	335	15.3	7.1	8.2	149.2
Nonferrous foundries (castings)	336	20.9	10.0	10.9	193.7
Fabricated metal products	34	18.5	7.9	10.7	147.6
Metal cans and shipping containers	341	16.2	6.5	9.7	128.1
Cutlery, handtools, and hardware	342	14.8	6.2	8.5	131.7
Plumbing and heating, except electric	343	20.3	7.8	12.5	128.7
Fabricated structural metal products	344	21.3	9.6	11.7	167.9
Screw machine products, bolts, etc.	345	14.7	5.9	8.8	89.5
Metal forgings and stampings	346	23.1	8.7	14.4	186.8
Metal services, n.e.c.	347	15.9	7.4	8.5	132.9
Ordnance and accessories, n.e.c.	348	10.2	4.5	5.7	96.7
Miscellaneous fabricated metal products	349	16.7	7.5	9.2	138.3
Industrial machinery and equipment	35	12.1	4.8	7.3	86.8
Engines and turbines	351	13.9	5.2	8.6	112.3
Farm and garden machinery	352	18.7	6.8	11.8	102.7
Construction and related machinery	353	16.3	6.7	9.7	116.5
Metalworking machinery	354	12.7	4.6	8.1	78.4
Special industry machinery	355	13.9	5.3	8.6	89.5
General industrial machinery	356	13.7	5.4	8.3	98.0
Computer and office equipment	357	3.8	1.9	1.9	41.7

See source and footnotes on page 43.

BLS Estimates of Occupational Injury and Illness Incidence Rates for Selected Industries, 1989, Cont.

Industry[a]	SIC Code[b]	Incidence Rates[c]			
		Total Cases[d]	Lost Workday Cases	Nonfatal Cases Without Lost Workdays	Lost Workdays
Refrigeration and service machinery	358	16.8	7.0	9.8	125.6
Industrial machinery, n.e.c.	359	12.9	5.1	7.9	94.8
Electronic and other electric equipment	36	9.1	3.9	5.1	77.5
Electric distribution equipment	361	12.0	4.8	7.2	92.0
Electrical industrial apparatus	362	11.1	4.6	6.4	98.4
Household appliances	363	18.0	7.1	10.9	127.3
Electric lighting and wiring equipment	364	10.8	4.8	6.0	100.8
Household audio and video equipment	365	10.0	4.6	5.4	96.3
Communications equipment	366	4.7	2.1	2.6	43.6
Electronic components and accessories	367	6.6	2.9	3.7	55.2
Transportation equipment	37	17.7	6.8	10.9	138.6
Motor vehicles and equipment	371	22.6	8.5	14.1	173.9
Aircraft and parts	372	10.1	3.7	6.4	70.2
Ship and boat building and repairing	373	38.0	15.6	22.4	343.9
Railroad equipment	374	20.9	9.7	11.2	181.0
Guided missiles, space vehicles, parts	376	4.8	2.2	2.6	39.7
Instruments and related products	38	5.6	2.5	3.1	55.4
Search and navigation equipment	381	3.6	1.6	2.1	35.6
Measuring and controlling devices	382	6.4	2.9	3.4	62.7
Medical instruments and supplies	384	7.4	3.4	4.0	74.3
Photographic equipment and supplies	386	5.2	2.2	3.1	49.3
Miscellaneous manufacturing industries	39	11.1	5.1	6.0	97.6
Musical instruments	393	10.7	4.6	6.1	78.5
Toys and sporting goods	394	13.3	6.2	7.1	112.2
Pens, pencils, office, and art supplies	395	10.1	4.6	5.5	94.4
Costume jewelry and notions	396	7.2	3.4	3.8	82.7
Nondurable goods		*11.6*	*5.5*	*6.1*	*107.8*
Food and kindred products	20	18.5	9.3	9.2	174.7
Meat products	201	27.1	13.5	13.7	250.9
Dairy products	202	15.2	7.9	7.3	156.5
Preserved fruits and vegetables	203	17.5	8.3	9.2	148.8
Grain mill products	204	13.1	6.7	6.4	139.8
Bakery products	205	13.5	6.9	6.6	153.9
Sugar and confectionery products	206	14.2	6.9	7.3	118.8
Fats and oils	207	15.3	7.7	7.5	164.8
Beverages	208	17.7	9.1	8.6	165.1
Miscellaneous foods and kindred products	209	16.3	8.4	7.9	139.3
Tobacco products	21	8.7	3.4	5.3	64.2
Textile mill products	22	10.3	4.2	6.1	81.4
Broadwoven fabric mills, cotton	221	8.5	2.7	5.8	57.1
Broadwoven fabric mills, manmade	222	8.0	3.4	4.6	72.1
Broadwoven fabric mills, wool	223	9.7	5.2	4.5	118.8
Narrow fabric mills	224	11.5	5.4	6.0	96.7
Knitting mills	225	9.0	4.2	4.8	73.4
Textile finishing, except wool	226	11.6	5.1	6.5	89.2
Carpets and rugs	227	13.8	4.9	8.9	94.3
Yarn and thread mills	228	11.7	4.1	7.6	83.5
Apparel and other textile products	23	8.6	3.8	4.8	80.5
Men's and boys' suits and coats	231	8.9	4.3	4.6	98.8
Men's and boys' furnishings	232	11.3	5.5	5.8	126.9
Women's and misses' outerwear	233	4.9	1.8	3.0	45.1
Women's and children's undergarments	234	7.2	2.8	4.4	53.1
Hats, caps and millinery	235	10.7	4.7	6.0	108.3
Girls' and children's outerwear	236	8.0	3.5	4.5	72.3
Miscellaneous apparel and accessories	238	6.9	3.3	3.6	60.9
Miscellaneous fabricated textile products	239	11.6	5.1	6.5	84.6
Paper and allied products	26	12.7	5.8	6.9	132.9
Paper mills	262	11.9	4.7	7.2	137.5
Paperboard mills	263	12.1	4.9	7.3	126.5
Paperboard containers and boxes	265	13.2	6.3	6.9	133.7
Printing and publishing	27	6.9	3.3	3.6	63.8
Newspapers	271	7.2	3.4	3.8	72.3
Periodicals	272	3.2	1.7	1.4	39.4
Books	273	6.5	3.1	3.4	55.5
Commercial printing	275	7.9	3.7	4.2	68.7
Manifold business forms	276	9.8	4.2	5.6	73.6
Blankbooks and bookbinding	278	9.6	5.0	4.7	88.9
Chemicals and allied products	28	7.0	3.2	3.7	63.4
Industrial inorganic chemicals	281	5.9	2.6	3.2	54.8
Plastics materials and synthetics	282	6.3	2.9	3.4	62.2
Drugs	283	5.8	2.9	2.9	55.0
Soap, cleaners, and toilet goods	284	8.5	4.0	4.5	72.4
Paints and allied products	285	10.4	5.0	5.4	85.3

See source and footnotes on page 43.

BLS Estimates of Occupational Injury and Illness Incidence Rates for Selected Industries, 1989, Cont.

Industry[a]	SIC Code[b]	Incidence Rates[c]			
		Total Cases[d]	Lost Workday Cases	Nonfatal Cases Without Lost Workdays	Lost Workdays
Industrial organic chemicals	286	6.1	2.5	3.6	55.1
Agricultural chemicals	287	7.8	3.5	4.3	63.3
Miscellaneous chemical products	289	8.7	4.1	4.5	82.8
Petroleum and coal products	29	6.6	3.3	3.3	68.1
Petroleum refining	291	5.3	2.6	2.7	56.6
Asphalt paving and roofing materials	295	10.2	5.1	5.1	108.7
Rubber and miscellaneous plastics products	30	16.2	8.0	8.2	147.2
Tires and inner tubes	301	15.4	9.2	6.2	170.4
Rubber and plastic footwear	302	16.8	8.2	8.7	157.4
Hose and belting and gaskets and packing	305	13.8	6.4	7.4	110.1
Fabricated rubber products, n.e.c.	306	17.1	8.6	8.5	150.4
Miscellaneous plastics products, n.e.c.	308	16.4	7.9	8.5	146.8
Leather and leather products	31	13.6	6.5	7.1	130.4
Leather tanning and finishing	311	25.0	13.9	11.0	290.0
Footwear, except rubber	314	13.3	6.0	7.3	117.4
Transportation and public utilities		**9.2**	**5.3**	**3.9**	**121.5**
Railroad transportation	40	7.7	5.8	1.9	153.3
Local and interurban passenger transit	41	9.6	5.5	4.1	125.3
Local and suburban transportation	411	12.0	7.2	4.8	143.2
Taxicabs	412	4.9	3.0	1.9	77.9
School buses	415	9.0	4.3	4.7	88.9
Trucking and warehousing	42	13.5	7.9	5.6	205.0
Trucking & courier services, except air	421	13.4	7.9	5.5	210.0
Water transportation	44	12.1	7.3	4.8	263.1
Water transportation of freight, n.e.c.	444	10.0	6.4	3.6	167.1
Transportation by air	45	14.2	8.2	5.9	138.2
Air transportation, scheduled	451	14.5	8.5	6.0	142.3
Transportation services	47	4.3	2.4	1.9	47.9
Communications	48	3.1	1.7	1.4	33.2
Electric, gas, and sanitary services	49	8.0	4.0	3.9	73.0
Electric services	491	6.0	2.6	3.4	51.0
Gas production and distribution	492	7.2	3.5	3.7	53.8
Combination utility services	493	6.7	3.8	2.9	71.0
Water supply	494	10.6	5.9	4.7	81.3
Sanitary services	495	18.7	10.6	8.1	192.6
Wholesale and retail trade		**8.0**	**3.6**	**4.4**	**63.5**
Wholesale trade		*7.7*	*4.0*	*3.8*	*71.9*
Wholesale trade — durable goods	50	6.7	3.3	3.4	55.8
Lumber and construction materials	503	11.5	6.1	5.4	114.1
Electrical goods	506	4.3	2.2	2.1	37.1
Machinery, equipment and supplies	508	7.7	3.6	4.1	55.3
Wholesale trade — nondurable goods	51	9.3	5.0	4.3	96.3
Groceries and related products	514	13.3	7.5	5.8	140.1
Petroleum and petroleum products	517	5.1	2.6	2.6	53.4
Retail trade		*8.1*	*3.4*	*4.6*	*60.0*
Building materials and garden supplies	52	9.8	4.8	5.0	78.1
General merchandise stores	53	10.7	5.0	5.7	82.6
Food stores	54	11.6	4.9	6.7	102.5
Automotive dealers and service stations	55	6.9	2.7	4.1	50.8
Apparel and accessory stores	56	3.0	1.3	1.7	21.7
Furniture and home furnishing stores	57	4.7	2.4	2.3	40.3
Eating and drinking places	58	8.5	3.2	5.3	49.4
Miscellaneous retail	59	4.2	1.9	2.3	37.5
Finance, insurance, and real estate		**2.0**	**0.9**	**1.1**	**17.6**
Depository institutions	60	1.4	0.6	0.9	12.2
Insurance carriers	63	1.7	0.7	1.0	14.0
Real estate	65	4.8	2.5	2.3	45.2
Services		**5.5**	**2.7**	**2.8**	**51.2**
Hotels and other lodging places	70	10.8	4.7	6.1	80.3
Personal services	72	3.6	1.9	1.7	42.9
Business services	73	4.7	2.4	2.3	48.3
Service to buildings	734	8.0	4.2	3.8	83.6
Auto repair, services, and parking	75	6.7	3.0	3.6	61.1
Miscellaneous repair services	76	8.6	4.4	4.2	73.8
Health services	80	7.3	3.8	3.5	76.7
Nursing and personal care facilities	805	15.5	8.8	6.6	181.8
Hospitals	806	8.5	4.2	4.2	78.7
Legal services	81	0.5	0.2	0.3	5.9
Educational services	82	3.5	1.5	2.0	26.8
Social services	83	5.7	2.8	2.9	46.5
Residential care	836	9.3	4.3	4.9	79.7
Museums, botanical, zoological gardens	84	6.2	3.0	3.3	51.2
Engineering and management services	87	1.9	0.9	1.0	13.2

See source and footnotes on page 43.

Occupational Injury and Illness Incidence Rates (Provisional) by Industry, 1990, Reporters to the National Safety Council

Note: Rates are provisional and may differ from those published in *Work Injury and Illness Rates 1991.*

Industry	SIC Code[b]	Incidence Rates per 100 Full-Time Employees[a]					
		Total Cases	Lost Workday Cases	Cases Involving Days Away From Work & Deaths	Nonfatal Cases Without Lost Workdays	Lost Workdays[c]	Days Away From Work
All Industries[d]		**9.0**	**3.7**	**2.2**	**5.3**	**84**	**57**
Agriculture, forestry, and fishing		**9.0**	**4.2**	**2.5**	**4.8**	**96**	**50**
Agricultural production—crops	01	15.4	7.8	4.1	7.6	181	73
Forestry	08	3.5	1.1	0.8	2.4	36	29
Forestry services	085	2.7	0.9	0.8	1.9	33	32
Mining		**4.4**	**1.5**	**1.1**	**2.9**	**45**	**37**
Metal mining	10	6.1	2.2	2.0	3.9	80	71
Miscellaneous metal ores	109	1.5	0.2	0.2	1.2	7	6
Coal mining	12	4.4	1.6	1.3	2.8	55	36
Oil and gas extraction	13	2.7	1.0	0.6	1.7	20	15
Crude petroleum and natural gas	131	2.9	1.1	0.5	1.9	22	15
Natural gas liquids	132	1.2	0.3	0.1	1.0	5	3
Oil and gas field services	138	2.5	1.0	1.0	1.5	23	22
Nonmetallic minerals, except fuels	14	6.8	2.3	1.5	4.5	63	50
Crushed and broken stone	142	6.4	1.9	1.7	4.6	39	35
Sand and gravel	144	11.9	2.6	2.6	9.3	75	72
Chemical and fertilizer mineral mining	147	6.5	3.0	1.3	3.6	108	84
Construction		**9.1**	**3.5**	**2.6**	**5.6**	**93**	**77**
General building contractors	15	16.8	5.2	4.2	11.6	150	128
Nonresidential building construction	154	11.2	4.6	3.5	6.6	115	92
Heavy construction, except building	16	7.5	3.1	2.2	4.4	83	67
Highway and street construction	161	9.2	4.0	3.3	5.1	101	85
Heavy construction, except highway	162	7.0	2.8	1.9	4.2	71	55
Special trade contractors	17	21.0	7.3	7.3	13.6	154	151
Manufacturing		**10.0**	**3.7**	**1.8**	**6.3**	**79**	**45**
Durable goods		*12.4*	*4.5*	*2.3*	*8.0*	*95*	*57*
Lumber and wood products	24	10.7	4.9	3.5	5.9	125	95
Logging	241	7.2	3.7	2.5	3.4	109	85
Sawmills and planing mills	242	13.7	6.7	5.1	7.0	157	124
Millwork, plywood and structural members	243	8.9	3.6	2.3	5.3	106	75
Miscellaneous wood products	249	9.9	3.8	2.6	6.1	92	76
Furniture and fixtures	25	14.3	6.1	2.4	8.2	105	37
Household furniture	251	8.2	3.0	1.9	5.2	45	35
Stone, clay, and glass products	32	12.1	5.1	2.8	7.1	121	84
Flat glass	321	22.2	7.5	3.3	14.7	168	110
Glass and glassware, pressed or blown	322	10.8	5.9	2.9	4.9	181	132
Products of purchased glass	323	8.1	3.0	0.7	5.2	89	29
Cement, hydraulic	324	14.0	4.6	3.7	9.4	104	74
Structural clay products	325	16.7	7.3	4.0	9.4	172	113
Pottery and related products	326	12.7	8.1	6.1	4.7	120	98
Concrete, gypsum, and plaster products	327	7.1	2.4	1.7	4.7	59	46
Miscellaneous nonmetallic mineral products	329	11.4	5.5	3.2	6.0	121	83
Primary metal industries	33	14.4	4.0	1.8	10.4	94	60
Blast furnace and basic steel products	331	11.1	3.4	2.4	7.7	122	109
Iron and steel foundries	332	20.1	4.7	1.6	15.4	86	36
Primary nonferrous metals	333	17.2	4.0	1.8	13.2	84	45
Nonferrous rolling and drawing	335	12.2	4.4	1.6	7.8	87	44
Nonferrous foundries (castings)	336	13.9	3.0	2.7	10.9	73	63
Fabricated metal products	34	13.3	4.5	2.2	8.8	85	52
Metal cans and shipping containers	341	13.4	5.3	2.5	8.2	84	63
Cutlery, hand tools, and hardware	342	11.0	3.6	2.8	7.4	82	59
Plumbing and heating, except electric	343	14.6	7.6	6.4	7.0	193	176
Fabricated structural metal products	344	5.4	1.8	1.4	3.6	35	28
Metal forgings and stampings	346	29.7	9.7	3.0	20.0	152	75
Metal services, n.e.c.	347	10.6	4.6	1.8	6.0	63	34
Ordnance and accessories, n.e.c.	348	7.1	2.2	0.7	4.9	76	29
Miscellaneous fabricated metal products	349	13.0	4.3	3.2	8.7	78	66
Industrial machinery and equipment	35	9.9	3.7	2.0	6.2	82	45
Farm and garden machinery	352	9.8	3.8	0.5	6.0	58	9
Construction and related machinery	353	11.3	4.5	2.4	6.9	104	57
Metalworking machinery	354	12.8	4.8	3.3	8.1	89	72
Special industry machinery	355	8.5	3.9	2.5	4.7	95	80
General industrial machinery	356	7.2	2.4	1.7	4.8	50	35
Refrigeration and service machinery	358	19.9	6.5	3.9	13.4	150	94
Industrial machinery, n.e.c.	359	16.4	5.4	2.1	11.1	113	42

See source and footnotes on page 49.

Occupational Injury and Illness Incidence Rates (Provisional) by Industry, 1990, Reporters to the National Safety Council, Cont.

Industry	SIC Code[b]	Incidence Rates per 100 Full-Time Employees[a]					
		Total Cases	Lost Workday Cases	Cases Involving Days Away From Work & Deaths	Nonfatal Cases Without Lost Workdays	Lost Work-days[c]	Days Away From Work
Electronic and other electric equipment	36	6.2	2.6	1.6	3.6	61	35
Electric distribution equipment	361	8.2	4.2	1.6	4.0	73	30
Electrical industrial apparatus	362	6.7	3.5	2.0	3.3	115	62
Household appliances	363	13.7	5.5	2.8	8.2	107	72
Electric lighting and wiring equipment	364	10.6	5.3	2.2	5.3	134	61
Communications equipment	366	4.3	1.8	1.3	2.5	44	28
Electronic components and accessories	367	3.8	1.4	1.0	2.4	31	19
Miscellaneous electrical equipment & supplies	369	13.5	5.5	3.9	8.1	131	79
Transportation equipment	37	18.1	6.6	3.1	11.6	132	78
Motor vehicles and equipment	371	31.9	11.2	4.7	20.7	227	125
Aircraft and parts	372	8.4	3.1	2.1	5.2	81	61
Ship and boat building and repairing	373	9.4	4.7	2.9	4.7	51	41
Railroad equipment	374	18.7	4.9	4.7	13.8	122	120
Guided missiles, space vehicles, parts	376	3.6	1.5	0.5	2.1	22	8
Instruments and related products	38	2.5	1.1	0.7	1.3	24	16
Search and navigation equipment	381	1.4	0.6	0.5	0.8	10	8
Measuring and controlling devices	382	5.1	2.1	1.2	3.0	49	29
Medical instruments and supplies	384	5.3	2.7	1.3	2.6	62	32
Photographic equipment and supplies	386	1.9	0.6	0.1	1.4	10	1
Miscellaneous manufacturing industries	39	11.2	4.5	3.4	6.7	81	60
Toys and sporting goods	394	13.5	6.0	4.8	7.5	100	83
Miscellaneous manufacturing industries	399	11.4	4.0	2.7	7.4	67	40
Nondurable goods		7.5	3.0	1.3	4.5	63	33
Food and kindred products	20	19.2	7.1	3.4	12.1	139	74
Meat products	201	34.3	13.8	4.9	20.6	233	94
Dairy products	202	10.2	4.4	3.1	5.8	93	64
Preserved fruits and vegetables	203	28.3	8.5	3.9	19.8	160	93
Grain mill products	204	9.4	2.6	2.2	6.8	55	51
Bakery products	205	12.5	5.5	2.9	7.1	127	73
Sugar and confectionery products	206	11.2	5.6	3.5	5.6	137	67
Fats and oils	207	5.5	3.5	1.6	2.0	97	51
Beverages	208	16.8	4.5	2.9	12.2	114	77
Miscellaneous foods and kindred products	209	7.2	3.7	2.6	3.4	127	98
Textile mill products	22	5.9	2.2	0.6	3.7	46	22
Broadwoven fabric mills, cotton	221	8.0	2.8	0.5	5.2	48	18
Broadwoven fabric mills, manmade	222	4.3	0.8	0.3	3.5	26	16
Broadwoven fabric mills, wool	223	5.4	3.0	0.5	2.4	47	18
Knitting mills	225	8.4	4.5	1.7	3.9	70	31
Textile finishing, except wool	226	5.4	1.7	0.6	3.7	45	22
Carpets and rugs	227	3.7	1.4	0.4	2.4	34	22
Yarn and thread mills	228	6.5	2.6	0.9	4.0	58	34
Miscellaneous textile goods	229	5.7	2.6	0.6	3.0	57	26
Apparel and other textile products	23	9.3	5.2	0.9	4.2	96	22
Men's and boys' furnishings	232	8.1	6.5	0.7	1.6	144	12
Miscellaneous fabricated textile products	239	10.3	4.9	0.9	5.4	80	24
Paper and allied products	26	9.7	3.3	1.9	6.4	85	56
Pulp mills	261	9.1	3.2	2.0	5.9	59	39
Paper mills	262	13.3	3.7	2.0	9.6	100	64
Paperboard mills	263	7.8	2.3	1.5	5.5	69	51
Paperboard containers and boxes	265	10.3	4.3	2.8	6.0	102	73
Converted paper and paperboard products	267	6.5	3.2	1.7	3.3	77	49
Printing and publishing	27	8.5	4.1	3.1	4.4	75	54
Newspapers	271	6.1	3.8	3.5	2.3	57	50
Commercial printing	275	12.6	5.5	3.3	7.2	116	71
Chemicals and allied products	28	3.6	1.6	0.6	2.0	34	14
Industrial inorganic chemicals	281	4.8	1.9	0.7	2.9	63	20
Plastics materials and synthetics	282	3.6	1.5	0.5	2.2	31	13
Drugs	283	2.8	1.4	0.6	1.3	28	12
Soap, cleaners, and toilet goods	284	4.7	2.6	1.2	2.1	47	23
Paints and allied products	285	3.7	1.6	0.8	2.1	40	21
Industrial organic chemicals	286	3.3	1.5	0.4	1.8	29	11
Agricultural chemicals	287	3.6	1.4	0.5	2.2	24	11
Miscellaneous chemical products	289	5.7	3.0	1.2	2.7	57	28
Petroleum and coal products	29	4.3	1.8	0.7	2.5	43	17
Petroleum refining	291	4.2	1.8	0.6	2.4	44	15
Asphalt paving and roofing materials	295	6.9	3.2	1.8	3.7	80	57
Miscellaneous products of petroleum and coal	299	13.4	3.6	1.5	9.8	72	48

See source and footnotes on page 49.

Occupational Injury and Illness Incidence Rates (Provisional) by Industry, 1990, Reporters to the National Safety Council, Cont.

Industry	SIC Code[b]	Incidence Rates per 100 Full-Time Employees[a]					
		Total Cases	Lost Workday Cases	Cases Involving Days Away From Work & Deaths	Nonfatal Cases Without Lost Workdays	Lost Work-days[c]	Days Away From Work
Rubber and miscellaneous plastics products	30	9.1	3.9	2.0	5.2	80	45
Tires and inner tubes	301	8.2	4.0	1.7	4.2	74	31
Fabricated rubber products, n.e.c.	306	9.7	5.0	3.9	4.7	108	77
Miscellaneous plastics products, n.e.c.	308	9.9	3.8	2.2	6.0	85	54
Leather and leather products	31	10.0	4.9	2.1	5.1	117	64
Transportation and public utilities		**7.6**	**4.0**	**3.0**	**3.5**	**109**	**89**
Railroad transportation	40	6.4	5.2	4.6	1.2	284	272
Local and interurban passenger transit	41	16.0	10.7	10.6	5.4	224	219
Local and suburban transportation	411	16.9	11.1	11.0	5.8	222	216
School buses	415	7.7	4.1	4.1	3.6	130	130
Trucking and warehousing	42	32.1	17.1	17.1	15.0	517	515
Trucking & courier services, except air	421	33.6	17.8	17.8	15.6	546	545
Public warehousing and storage	422	8.4	2.6	2.0	5.7	30	19
Water transportation	44	5.0	3.1	3.0	1.8	116	114
Freight transportation on the Great Lakes	443	13.1	2.6	2.6	10.5	83	83
Water transportation of freight, n.e.c.	444	4.3	3.6	3.6	0.8	156	156
Services incidental to water transportation	449	6.0	4.5	3.9	1.6	154	144
Transportation by air	45	6.7	3.1	2.3	3.6	44	32
Airports, flying fields & services	458	6.7	3.1	2.3	3.6	44	32
Pipelines, except natural gas	46	3.4	1.3	1.1	2.1	33	25
Transportation services	47	10.3	8.6	8.5	1.8	202	202
Communications	48	2.0	1.0	0.8	1.1	23	15
Electric, gas, and sanitary services	49	5.9	2.9	1.5	3.0	54	29
Electric services	491	5.1	2.5	1.0	2.6	51	22
Gas production and distribution	492	7.3	3.4	2.4	3.9	61	41
Combination utility services	493	5.6	2.9	1.5	2.7	48	23
Water supply	494	11.7	5.7	5.2	6.0	135	117
Sanitary services	495	8.1	3.3	3.0	4.9	64	51
Wholesale and retail trade		**6.9**	**3.5**	**2.3**	**3.3**	**73**	**54**
Wholesale trade		8.9	4.5	2.7	4.4	84	58
Wholesale trade—durable goods	50	11.3	5.7	3.3	5.6	103	70
Lumber and construction materials	503	13.7	6.0	4.8	7.7	113	105
Electrical goods	506	6.8	4.3	1.3	2.4	44	14
Machinery, equipment and supplies	508	5.1	2.6	1.8	2.5	54	27
Miscellaneous durable goods	509	11.4	6.3	0.7	5.1	67	17
Wholesale trade—nondurable goods	51	4.0	2.2	1.7	1.9	44	34
Groceries and related products	514	12.9	7.3	7.3	5.6	162	145
Chemicals and allied products	516	2.8	0.9	0.5	1.9	12	8
Petroleum and petroleum products	517	1.7	0.8	0.5	1.0	12	9
Miscellaneous nondurable goods	519	6.5	4.3	4.3	2.2	69	69
Retail trade		**2.8**	**1.5**	**1.2**	**1.2**	**50**	**47**
Automotive dealers and service stations	55	2.7	1.5	1.2	1.1	51	48
Services		**6.3**	**2.7**	**2.3**	**3.6**	**48**	**35**
Business services	73	2.3	1.0	0.7	1.4	37	15
Service to buildings	734	5.4	2.0	1.7	3.4	23	17
Auto repair, services, and parking	75	14.1	5.7	5.7	8.3	111	111
Miscellaneous repair services	76	8.7	3.6	3.0	5.1	94	66
Health services	80	8.7	4.1	3.7	4.6	74	58
Hospitals	806	8.7	4.1	3.7	4.6	74	58
Educational services	82	6.8	1.3	1.2	5.5	25	24
Social services	83	11.0	3.8	2.8	7.2	63	37
Engineering and management services	87	2.7	1.0	0.6	1.7	14	8
Research, development and testing services	873	2.7	1.0	0.6	1.7	15	8
Public administration		**9.0**	**4.7**	**4.4**	**4.3**	**83**	**72**
Executive, legislative, and general	91	13.5	5.9	5.3	7.6	98	86
General government, n.e.c.	919	13.8	6.2	5.5	7.7	102	89
Public works departments	9191	18.6	11.3	6.2	7.3	172	105
Environmental quality and housing	95	4.9	2.4	2.1	2.6	34	28
Offices		1.8	0.7	0.4	1.1	12	7
Research & development or laboratory		3.1	1.0	0.6	2.1	16	9
Warehouse or storage yard		3.6	1.7	1.2	1.9	26	17

Source: Reports of National Safety Council members participating in the *Occupational Safety/Health Award Program.*

Note: These rates should not be interpreted as representative of the industries listed or of Council member companies. Rates are provisional and may differ from those published in *Work Injury and Illness Rates 1991.* Rates for each industry may not be comparable to previous years due to changes in numbers of reporters and adoption of the 1987 SIC manual.

[a] Based on OSHA definitions, see page 43; 200,000 employee hours used as the equivalent of 100 full-time employees.

[b] *Standard Industrial Classification (SIC) Manual,* 1987 Edition.

[c] Lost workdays include both days away from work and days of restricted work activity.

[d] Division and 2- and 3-digit SIC codes include data for 4-digit codes not shown separately.

OCCUPATIONAL HEALTH

Over 280,000 occupational illnesses were recognized or diagnosed in 1989 according to the Bureau of Labor Statistics (BLS). Disorders associated with repeated trauma were the most common illness with 146,900 cases, followed by skin diseases and disorders (62,100), and respiratory conditions due to toxic agents (18,900).

The overall incidence rate of occupational illness for all workers was 37.1 per 10,000 full-time workers. Of the major industry divisions, manufacturing had the highest rate, 1989, 108.3 per 10,000 full-time workers. Workers in manufacturing also had the highest rates for disorders associated with repeated trauma, respiratory conditions due to toxic agents, and disorders due to physical agents. Agriculture had the second highest incidence rate, 45.5, although agriculture workers had the highest incidence of all the industry divisions for skin diseases.

The table below shows the number of occupational illnesses and the incidence rate per 10,000 full-time workers as measured by the 1989 BLS survey. To convert these to incidence rates per 100 full-time workers, which are comparable to other published BLS rates, divide the rates in the table by 100. The BLS survey records illnesses only for the year in which they are recognized or diagnosed as work-related. Since only recognized cases are included, the figures underestimate the incidence of occupational illness.

Number of Occupational Illnesses and Incidence Rates by Industry and Type of Illness, 1989

Occupational Illness	Private Sector[a]	Agriculture[a,b]	Mining[b]	Construction	Manufacturing	Trans. and Pub. Util.	Trade[b]	Finance[b]	Services
	NUMBER OF ILLNESSES (in thousands)								
All illnesses	**283.7**	**4.3**	**2.0**	**7.7**	**204.5**	**8.4**	**19.7**	**3.7**	**33.6**
Disorders associated with repeated trauma	146.9	0.4	0.6	0.9	130.0	2.5	6.7	1.3	4.4
Skin diseases, disorders	62.1	2.8	0.3	2.8	36.9	2.4	4.7	0.7	11.4
Respiratory conditions due to toxic agents	18.9	0.1	(c)	0.7	9.9	0.8	3.5	0.3	3.5
Disorders due to physical agents	17.7	0.3	0.1	0.9	12.5	0.5	(d)	0.3	2.4
Poisoning	5.8	0.1	0.2	0.5	2.7	0.3	(d)	(d)	1.1
Dust diseases of the lungs	2.6	(c)	0.5	0.2	1.3	0.1	0.1	(d)	0.2
All other occupational diseases	29.7	0.4	0.2	1.7	11.1	1.7	3.2	0.8	10.5
	INCIDENCE RATE per 10,000 Full-Time Workers								
All illnesses	**37.1**	**45.5**	**27.4**	**17.0**	**108.3**	**16.0**	**9.8**	**6.1**	**16.7**
Disorders associated with repeated trauma	19.2	4.7	8.7	2.0	68.9	4.8	3.3	2.2	2.2
Skin diseases, disorders	8.1	30.4	3.9	6.1	19.6	4.6	2.3	1.3	5.7
Respiratory conditions due to toxic agents	2.5	1.5	0.5	1.5	5.2	1.6	1.7	0.5	1.7
Disorders due to physical agents	2.3	3.1	1.6	1.9	6.6	1.0	(d)	0.4	1.2
Poisoning	0.8	1.5	2.1	1.1	1.4	0.6	(d)	(d)	0.6
Dust diseases of the lungs	0.3	0.2	7.5	0.5	0.7	0.2	(c)	(d)	0.1
All other occupational diseases	3.9	4.1	3.1	3.8	5.9	3.2	1.6	1.4	5.2

Source: Bureau of Labor Statistics, U.S. Department of Labor. Components may not add to totals due to rounding.
[a]Private sector includes all industries except government, and excludes farms with less than 11 employees.
[b]Agriculture includes forestry and fishing; mining includes quarrying and oil and gas extraction; trade includes wholesale and retail; finance includes insurance and real estate.
[c]Fewer than 50 cases.
[d]Data not reported or do not meet publication guidelines.
[e]Less than 0.05.

MOTOR-VEHICLE ACCIDENTS, 1990

Between 1912 and 1990, motor-vehicle deaths per 10,000 registered vehicles were reduced 94 per cent, from 33 to about 2. In 1912, there were 3,100 fatalities when the number of registered vehicles totaled only 950,000. In 1990, there were 46,300 fatalities, but registrations soared to almost 195 million.

The 1990 mileage death rate was the lowest rate on record. Mileage data were not available in 1912.

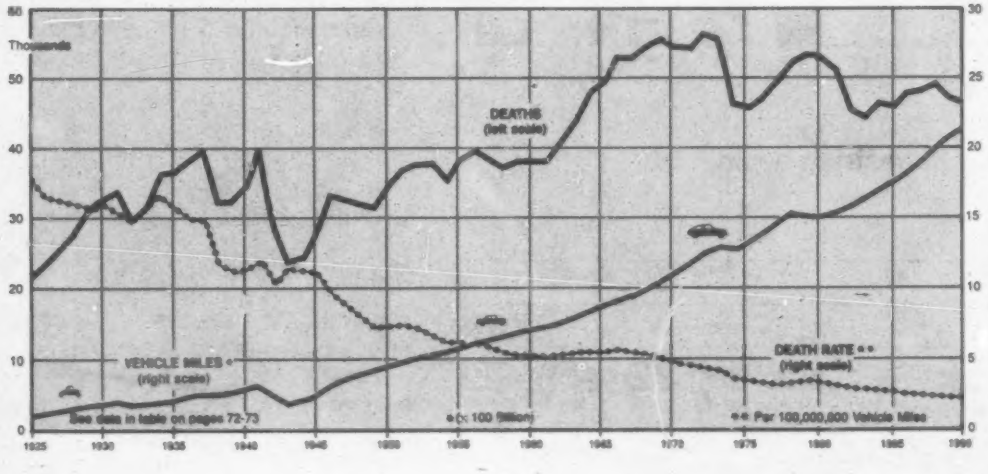
Deaths	**46,300**
Disabling injuries	**1,700,000**
Cost (see also pages 2 and 3)	**$89.0 billion**
Motor-vehicle mileage	**2,150 billion**
Death rate per 100,000,000 vehicle miles	**2.15**
Registered vehicles in the U.S.	**194,502,000**
Licensed drivers in the U.S.	**167,655,000**

Accident totals

	Number of Accidents	Drivers (Vehicles) Involved
Fatal	**41,200**	**62,200**
Disabling injury	**1,100,000**	**2,000,000**
Property damage and nondisabling injury[a]	**10,400,000**	**17,700,000**
Total (rounded)	**11,500,000**	**19,800,000**

[a]Estimating procedures for these figures were revised beginning with the 1990 edition.

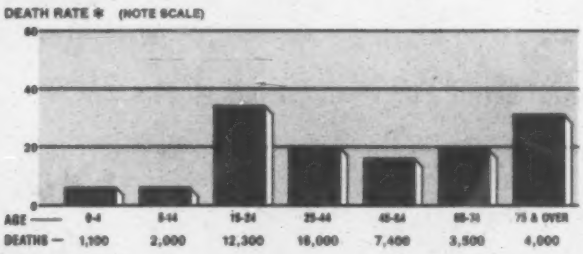
Travel, deaths and death rates



How people died in motor-vehicle accidents, 1990

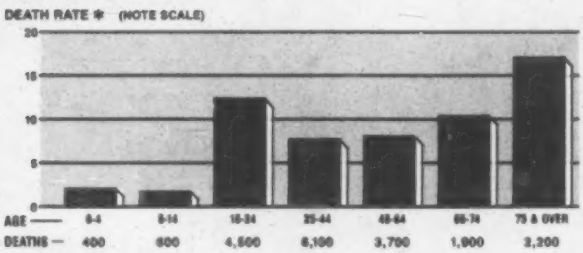
Type of accident and age of victim

	Death Total	Change from 1989	Death Rate*
All motor-vehicle accidents	**46,300**	**– 2%**	**18.6**
Urban	16,500	0%	
Rural	29,800	– 3%	



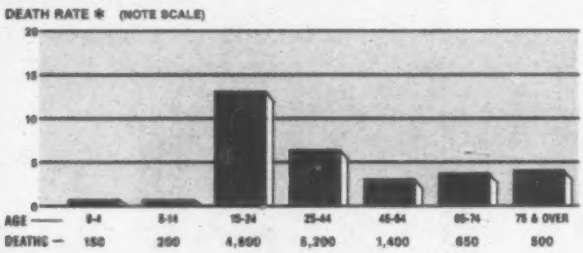
Includes deaths involving mechanically or electrically powered highway-transport vehicles in motion (except those on rails), both on and off the highway or street.

Collision between motor vehicles	**19,400**	**– 3%**	**7.8**
Urban	6,700	+ 8%	
Rural	12,700	– 8%	



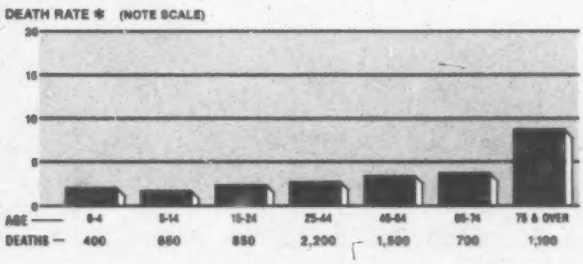
Includes deaths from collisions of two or more motor vehicles. Motorized bicycles and scooters, trolley buses, and farm tractors or road machinery traveling on highways are motor vehicles.

Collision with fixed object	**12,900**	**+ 2%**	**5.2**
Urban	4,500	0%	
Rural	8,400	+ 4%	



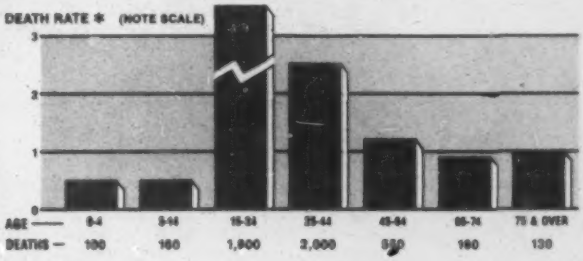
Includes deaths from collisions in which the first harmful event is the striking of a fixed object such as a guardrail, abutment, impact attenuator, etc.

Pedestrian accidents	**7,400**	**– 3%**	**3.0**
Urban	4,400	0%	
Rural	3,000	– 6%	



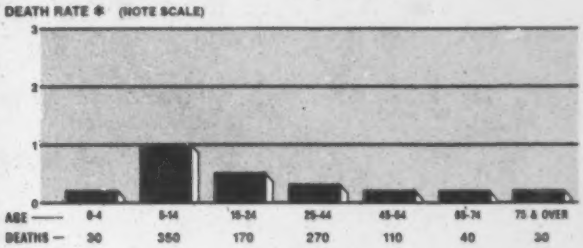
Includes all deaths of persons struck by motor vehicles, either on or off a street or highway, regardless of the circumstances of the accident.

	Death Total	Change from 1989	Death Rate[a]
Noncollision accidents	4,900	– 2%	2.0
Urban	400	– 33%	
Rural	4,500	+ 2%	



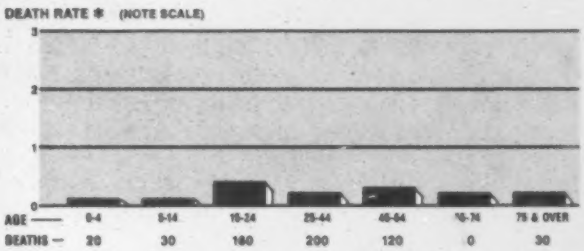
Includes deaths from accidents in which the first injury- or damage-producing event was an overturn, jackknife or other type of noncollision.

Collision with pedalcycle	1,000	– 9%	0.4
Urban	400	– 33%	
Rural	600	+ 20%	



Includes deaths of pedalcyclists and motor-vehicle occupants from collisions between pedalcycles and motor vehicles on streets, highways, private driveways, parking lots, etc.

Collision with railroad train	600	–14%	0.2
Urban	100	– 50%	
Rural	500	0%	



Includes deaths from collisions of motor vehicles (moving or stalled) and railroad vehicles at public or private grade crossings. In other types of accidents, classification requires motor vehicle to be in motion.

Other collision (animal, animal-drawn vehicles, street cars)	100	0%	(b)

Includes deaths from motor-vehicle collisions not specified in other categories above. Most of the deaths arose out of accidents involving animals or animal-drawn vehicles.

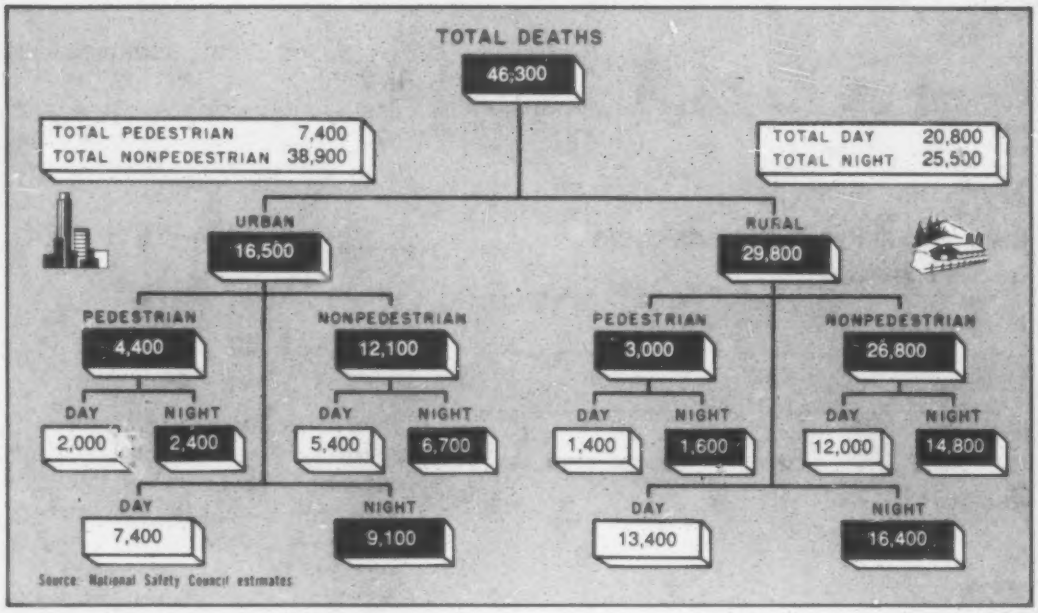
Note: Procedures and benchmarks for estimating deaths by type of accident and age were changed in 1990. Estimates for 1987 and later years are not comparable to earlier years. The noncollision and fixed object categories were most affected by the changes.

***Deaths per 100,000 population in each age group.**

[a]Deaths per 100,000 population.
[b]Death rate was less than 0.05.

Principal classes of motor-vehicle deaths

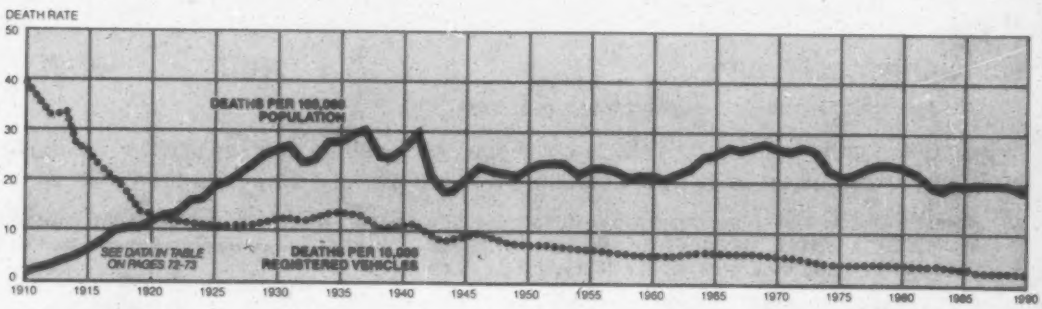
Almost two out of three deaths in 1990 occurred in places classified as rural. In urban areas, about one fourth of the victims were pedestrians; in rural areas, the victims were mostly occupants of motor vehicles. More than one half of all deaths occurred in night accidents.



Trends in death rates

Motor-vehicle deaths decreased 2 per cent from 1989 to 1990, mileage increased 2 per cent, the number of vehicles increased 1 per cent, and the population increased 1 per cent. As a result of the decrease in deaths in combination with increases in vehicle registrations, mileage, and population, the registration, mileage, and population death rates all decreased in 1990.

The mileage death rate per 100,000,000 vehicle miles was 2.15 in 1990, a 4 per cent decrease from the 1989 rate of 2.24 (see chart on page 51). The registration death rate per 10,000 motor vehicles decreased 3 per cent from 2.46 in 1989 to 2.38 in 1990 (see chart below). The population death rate per 100,000 persons declined 3 per cent, from 19.1 in 1989 to 18.6 in 1990 (see chart below). See also pages 72 and 73.



State legislation

The table below shows the latest information available regarding the status of alcohol, occupant protection, and speed legislation, which varies greatly by state. Currently all states and the District of Columbia have a 21 year old drinking age and child safety seat laws. Mandatory belt use laws are in effect in 37 states plus D.C., and the 65 mph speed limit is allowed on certain portions of rural interstates in at least 40 states.

State	Alcohol Legislation			Mandatory Belt Use Law			Child Safety Seat Law	Motorcycle Helmet Law	65 Speed Limit	
	21 Year Drinking Age Since[a]	Open Container Law[b]	BAC Limit[c]	Effective Date	Enforcement[d]	Seating Positions	Date[e]	Law[f]	Effective Date[g]	Applicable Vehicles
Alabama	1985	no	.10	none	...	...	1982	yes	1987	all
Alaska	1983	yes	.10	9/90	2	all	7/85	19	none	...
Arizona	1984	no	.10	1/91	2	front	1984	18	4/87	all
Arkansas	1957	no	.10	none	...	...	8/83	yes	4/87	all
California	1933	yes	.08	1/86	2	all	1/83	15.5	5/87	some
Colorado	1987	no	.10	7/87	2	front	1/84	no	4/87	all
Connecticut	1985	no	.10	1/86	1	front	1982	18	none	...
Delaware	1983	yes	.10	none	...	...	3/82	19[h,i]	none	...
Dist. of Columbia	1986	no	.10	12/85	2	front[j]	7/83	yes	none	...
Florida	1985	yes	.10	7/86	2	front	7/83	yes	4/87	all
Georgia	1986	no	.12	9/88	2	front	7/84	yes	2/88	all
Hawaii	1986	yes	.10	12/85	1	front	1983	18	none	...
Idaho	1987	yes[k]	.10	7/86	2	front	1/85	18	5/87	all
Illinois	1980	yes	.10	7/85	2	front	7/83	no	4/87	some
Indiana	1935	no	.10	7/87	2	front	1/84	18	6/87	some
Iowa	1986	yes	.10	7/86	1	front	1/85	no	5/87	all
Kansas	1985	yes	.10	7/86	2	front	7/81	18	5/87	some
Kentucky	1938	no	.10	none	...	...	7/82	yes	6/87	all
Louisiana	1987	no	.10	7/86	2	front	1/85	yes	4/87	all
Maine	1985	no	.08	none	...	...	9/83	15[h,m]	6/87	all
Maryland	1982	no	.10	7/86	2	front[j]	1/84	18	none	...
Massachusetts	1985	no	.10	repealed	...	...	1/82	yes	none	...
Michigan	1978	yes	(l)	7/85	2	front	3/82	yes	12/87	some
Minnesota	1986	yes	.10	8/86	2	front	8/83	18[h]	6/87	all
Mississippi	1986	no	.10	3/90	1	front	7/83	yes	4/87	all
Missouri	1945	no	.10	9/85	2	front	1/84	yes	4/87	some
Montana	1987	no	(l)	10/87	2	all	10/83	18	4/87	all
Nebraska	1985	no	.10	repealed	...	...	8/83	yes	4/87	all
Nevada	1933	no	.10	7/87	2	all	7/83	yes	4/87	all
New Hampshire	1985	no	.10	none	...	...	(l)	18	4/87	all
New Jersey	1982	no	.10	3/85	2	front	4/83	yes	none	...
New Mexico	1934	yes	.10	1/86	1	front	5/83	18	4/87	all
New York	1990	no	(l)	12/84	1	front	4/82	yes	none	...
North Carolina	1986	yes	.10	10/85	1	front	7/85	yes	4/87	all
North Dakota	1936	yes	.10	none	...	...	1/84	18	4/87	all
Ohio	1987	yes	.10[n]	5/86	2	front	6/83	18[m]	7/87	some
Oklahoma	1983	yes	.10	2/87	2	front	11/83	18	4/87	all
Oregon	1935	yes	.08[n]	12/90	1	all	1/84	yes	10/87	some
Pennsylvania	1935	no	.10	11/87	2	front	11/83	yes	none	...
Rhode Island	1984	no	.10[n]	none	...	...	7/87	(o)	none	...
South Carolina	1986	yes	.10	7/89	2	front	1/89	21	7/87	all
South Dakota	1987	yes	.10	none	...	...	7/84	18	4/87	all
Tennessee	1984	no	.10	4/86	2	front	1/78	yes	5/87	all
Texas	1985	no	.10	9/85	1	front	1/85	yes	5/87	some
Utah	1935	yes	.08	4/86	2	front	4/83	18	5/87	all
Vermont	1986	no	.10	none	...	...	7/84	yes	4/87	all
Virginia	1986	yes	.10	1/88	2	front	1/83	yes	7/88	some
Washington	1934	yes	.10	6/86	2	all	1/84	yes	4/87	some
West Virginia	1986	yes	.10	none	...	...	7/81	yes	5/87	all
Wisconsin	1986	yes	.10[n]	12/87	2	front	4/84	18[h]	6/87	all
Wyoming	1988	no	.10	6/89	2	front	4/85	18	5/87	all

Source: Offices of state Governor's Highway Safety Representatives. Motorcycle helmet law data—Motorcycle Industry Council, Inc., *1990 Motorcycle Statistical Annual*. Used with permission.

[a]Year in which original law became effective, not when grandfather clauses expired; [b]Law prohibiting open liquor containers in motor vehicles; [c]Per cent blood alcohol concentration which constitutes the threshold of legal intoxication; [d]"1" indicates primary enforcement (law can be enforced on its own), "2" indicates secondary enforcement (law enforced only if vehicle stopped for a separate offense); [e]Effective date of original law, not of subsequent revisions; [f]Presence of law or age below which riders are required to wear helmet; [g]Includes administrative action as well as legislation; [h]Plus instruction permit holders; [i]Possession of helmet required by all; [j]Excluding front center seat; [k]Does not include beer; [l]Information not available; [m]Plus novice license holders; [n]Different legal limit for minors; [o]Passengers only.

Alcohol

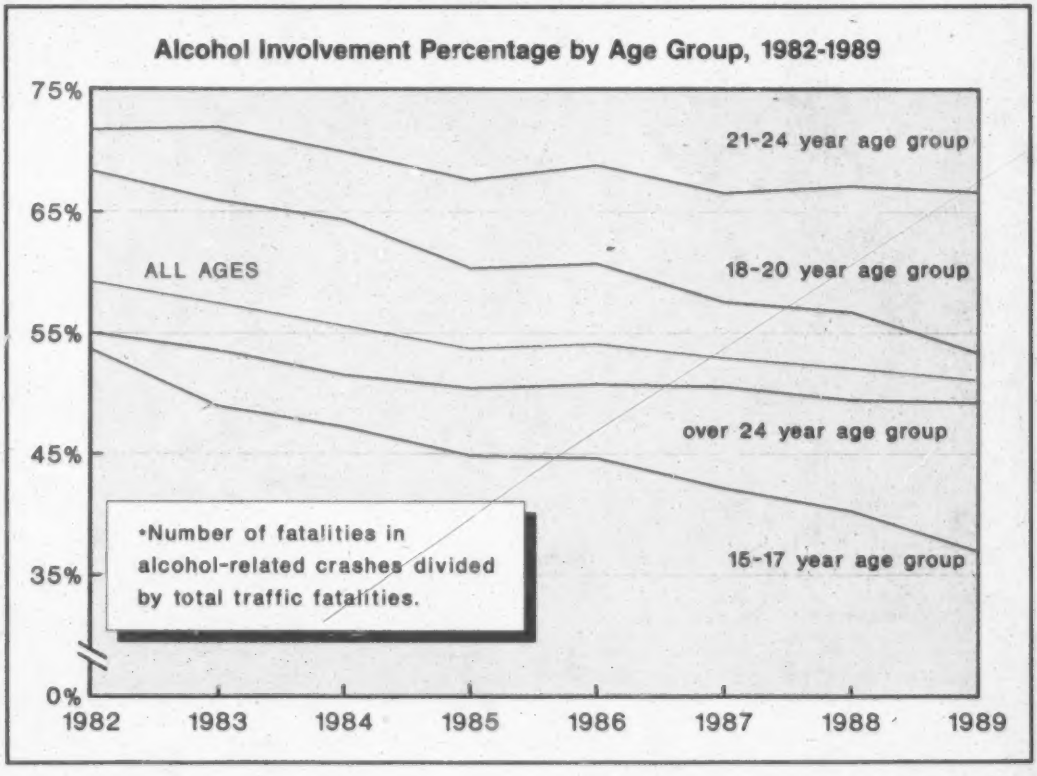
About 49 per cent of all traffic fatalities in 1989 involved an intoxicated or alcohol-impaired driver or non-occupant, according to studies of the National Highway Traffic Safety Administration's Fatal Accident Reporting System file. Of these 22,415 alcohol-related traffic fatalities, an estimated 17,849 occurred in accidents in which a driver or non-occupant was intoxicated (blood alcohol concentration [BAC] of 0.10 per cent or greater), and 4,566 involved a driver or non-occupant who had been drinking but was not legally intoxicated. Information from other sources shows that alcohol is also a factor in about 29 per cent of serious injury accidents and 7 per cent of property damage accidents. The estimated cost of all alcohol-related motor-vehicle accidents in 1990 was about $20.7 billion.

Involvement by Age. For drivers involved in fatal crashes and for all traffic fatalities, rates of alcohol involvement are highest for persons in the 21 to 24 year age group. For drivers in that age group who were involved in fatal crashes in 1989, about 35 per cent were intoxicated (BAC $\geq$ .10 per cent). Percentages decrease for each age group over 25. For traffic fatalities of persons 21 to 24 years old in 1989, about 67 per cent occurred in alcohol-related crashes (driver or non-occupant BAC $\geq$ .01 per cent).

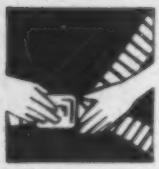
Trends. Alcohol involvement in fatal traffic crashes has declined since 1982. In that year, 57 per cent of all fatal traffic crashes involved alcohol. In 1989, only 49 per cent involved alcohol. Alcohol-related fatalities have declined most for the 15 to 17 year age group (see chart below).

Weekends and nighttime. In 1989, 74 per cent of fatal traffic crashes that occurred on weekend nights were alcohol-related compared to only 19 per cent during weekday days.

Source: National Highway Traffic Safety Administration. *Alcohol Involvement in Fatal Traffic Crashes, 1989*. February 1991; Alcohol-related traffic fatalities among youth and young adults—United States, 1982-1989. *Morbidity and Mortality Weekly Report, 40* (11), March 22, 1991, 178-179, 185-187.



Occupant protection



According to National Highway Traffic Safety Administration (NHTSA) studies, manual lap and shoulder belts are 45 per cent effective in preventing fatalities, 50 per cent effective in preventing moderate to critical injuries, and 10 per cent effective in preventing minor injuries. For unrestrained occupants of passenger cars involved in fatal traffic crashes in 1989, about 50 per cent were killed. For restrained occupants, only about 27 per cent were killed (see chart below). As of early 1991, 37 states and the District of Columbia had enacted mandatory safety belt use laws (see page 55). All fifty states and the District of Columbia have mandatory child safety seat laws.

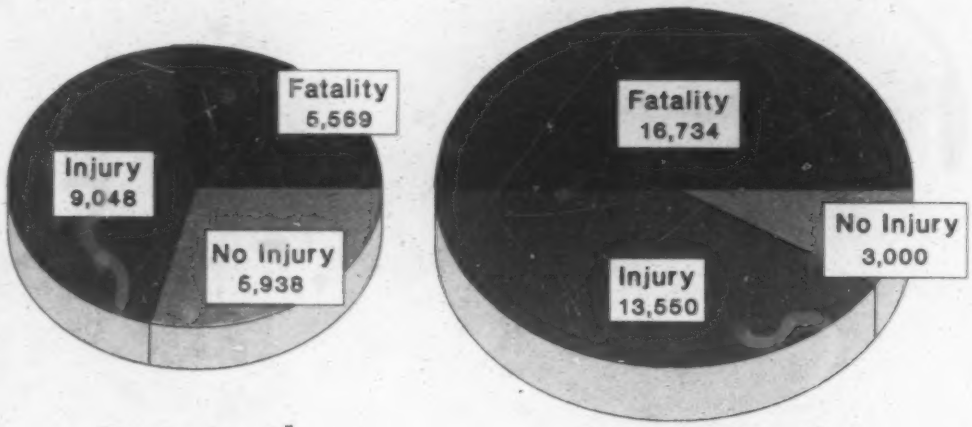
Usage. According to the 19-city observation survey by NHTSA, overall driver restraint use in the U.S. was estimated to be 49 per cent in 1990, an increase of 3 per cent from 1989. For the 14 cities in states with laws, belt use was 54 per cent. For the 5 cities in states without laws, belt use was 36 per cent.

Although belt usage for automatic belts of all types was estimated at 79 per cent in 1990, down 6 per cent from 1989, there is evidence that many automatic systems are being misused. Motorized shoulder belt systems had the highest usage rates, 93 per cent in 1990, but one study[a] found that accompanying lap belts are utilized in only about 28 per cent of such vehicles.

Another recent study[b] of 1,628 cars with both airbags and manual belts found that belt usage in those cars was slightly higher than in a control group of cars with manual belts only. The study found no evidence for the supposition that drivers of vehicles with airbags feel adequately protected and reduce their usage of belts.

Source: National Highway Traffic Safety Administration, Office of Driver and Pedestrian Research. *Occupant protection trends in 19 cities.* (Nov. 1989); *Use of automatic safety belt systems in 19 cities.* (Feb. 1991).
[a]Reinfurt, D.W., St. Cyr, C.L. & Hunter, W.W. Usage patterns and misuse rates of automatic seat belts by system type. *34th Annual Proceedings, Association for the Advancement of Automotive Medicine.* (1990).
[b]Williams, A.F., Wells, J.K., & Lund, A.K. Seat belt use in cars with air bags. *American Journal of Public Health, 80* (12), December 1990, 1514-1516.

Injury Severity of Passenger Car Occupants in Fatal Crashes, 1989



*Restrained includes 86 occupants whose injury severity was unknown. Unrestrained includes 134 with unknown severity. In addition, there were 7,697 occupants with unknown restraint use. Source: National Highway Traffic Safety Administration.

Speed

The Surface Transportation and Uniform Relocation Assistance Act of 1987, enacted April 2, 1987, allowed states to raise the speed limit to 65 mph on interstate highways passing through areas with populations of less than 50,000. In April 1987, 18 states raised the speed limit, and by the end of 1987, 38 states had implemented the 65 mph limit. Two more states followed suit in 1988. Ten states and the District of Columbia have still retained the 55 mph limit (see map below). (Alaska and Delaware have no eligible interstate highways, and Hawaii has five eligible miles.)

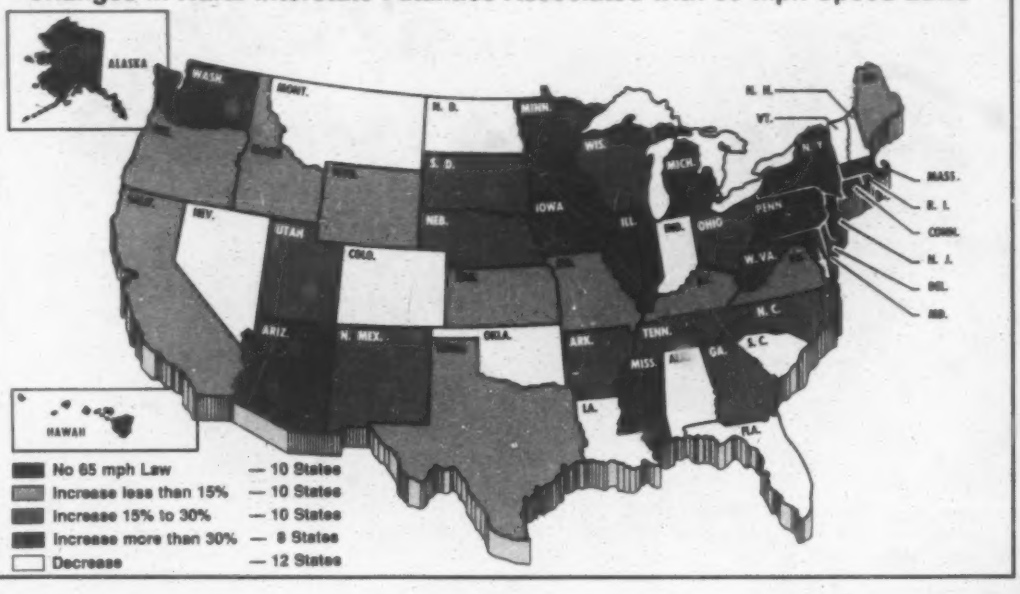
One recent study[a] compared fatalities before and after the speed limit change (January 1986 through November 1988) using Fatal Accident Reporting System data. Rural interstates and rural noninterstates were investigated separately for each of the 40 law change states using techniques to control for seasonal changes in traffic-related variables. Of the 40 states, 28 showed increases in fatalities on rural interstates and 12 showed decreases. Changes for ten of the states with increases and two of the states with decreases were statistically significant. Magnitude of the changes ranged from an increase of 54 per cent in Washington to a decrease of 66 per cent in Indiana. Eight states recorded increases in fatalities of more than 30 per cent (see map below).

The study concluded that the 65 mph law had disparate effects in the various states that adopted it, increasing rural interstate deaths in some states, decreasing in some, and showing no effect in others. There were more states with increases in fatalities than decreases, with a mean effect among the 40 states of approximately 15 per cent more fatalities.

Researchers also found an increase in fatalities in most states on rural noninterstate highways, resulting in a median effect of 5 per cent more fatalities on these roads. The study attributed this to a "speed spillover" effect from increases in speed on rural interstate highways.

[a]Garber, S. & Graham, J.D. The effects of the new 65 mile-per-hour speed limit on rural highway fatalities: A state-by-state analysis. *Accident Analysis & Prevention*, 22(2), April 1990, 137–149.

Changes in Rural Interstate Fatalities Associated with 65 mph Speed Laws



Age of driver

The table below shows the total number of licensed drivers and drivers involved in accidents by selected ages and age groups. The figures in the last two columns of the table indicate the frequency of accident involvement on the basis of the number of drivers in each age group. The fatal accident involvement rates per 100,000 drivers in each age group ranged from a low of 22 for drivers 65 to 74 years of age to a high of 80 for drivers 19 and under. The all accident involvement rates per 100 drivers in each age group ranged from 6 for drivers 65 to 74 years of age to 29 for drivers 19 and under.

On the basis of miles driven by each age group, however, involvement rates (not shown in the table) are highest for young and old drivers. The all accident involvement rate decreases after age 25, increases gradually between ages 35 and 74, and then increases sharply. The same basic "U"-shaped curve is found for fatal accident involvement rates.[a]

[a]Transportation Research Board. (1988). *Transportation in an aging society: Improving mobility and safety for older persons* (Special Report 218). Washington, DC: National Research Council.

Age of Drivers—Total Number and Number in Accidents, 1990

	Licensed Drivers		Drivers in Accidents					
			Fatal		All		Per No. of Drivers	
Age Group	Number	%	Number	%	Number	%	Fatal[a]	All[b]
Total	**167,655,000**	**100.0%**	**62,200**	**100.0%**	**19,800,000**	**100.0%**	**37**	**12**
Under 16	*38,000*	[c]	*500*	*0.8*	*90,000*	*0.5*	*1,316*[d]	*237*[d]
16	*1,482,000*	*0.9*	*1,200*	*1.9*	*560,000*	*2.8*	*81*	*38*
17	*2,321,000*	*1.4*	*1,700*	*2.7*	*680,000*	*3.4*	*73*	*29*
18	*2,842,000*	*1.7*	*2,200*	*3.5*	*770,000*	*3.9*	*77*	*27*
19	*3,114,000*	*1.9*	*2,200*	*3.5*	*750,000*	*3.8*	*71*	*24*
19 and under	9,797,000	5.8	7,800	12.5	2,850,000	14.4	80	29
20	*3,169,000*	*1.9*	*1,900*	*3.1*	*710,000*	*3.6*	*60*	*22*
21	*3,242,000*	*1.9*	*2,200*	*3.5*	*660,000*	*3.3*	*68*	*20*
22	*3,377,000*	*2.0*	*1,900*	*3.1*	*610,000*	*3.1*	*56*	*18*
23	*3,581,000*	*2.1*	*1,900*	*3.1*	*600,000*	*3.0*	*53*	*17*
24	*3,750,000*	*2.2*	*1,900*	*3.1*	*580,000*	*2.9*	*51*	*16*
20-24	17,119,000	10.2	9,800	15.7	3,160,000	15.9	57	19
25-34	41,601,000	24.8	16,600	26.7	5,340,000	27.0	40	13
35-44	35,119,000	21.0	11,300	18.2	3,640,000	18.4	32	10
45-54	23,133,000	13.8	6,400	10.3	1,990,000	10.0	28	9
55-64	19,059,000	11.4	4,400	7.1	1,340,000	6.8	23	7
65-74	15,237,000	9.1	3,300	5.3	950,000	4.8	22	6
75 and over	6,590,000	3.9	2,600	4.2	530,000	2.7	39	8

Source: Drivers in accidents based on reports from 18 state traffic authorities. Number of licensed drivers by age are from the Federal Highway Administration. Procedures for estimating the number of accidents were changed for the 1990 edition and are not comparable to those in previous editions.

[a]Drivers in fatal accidents per 100,000 licensed drivers in each age group.

[b]Drivers in all accidents per 100 licensed drivers in each age group.

[c]Less than 0.05

[d]Rates for drivers under age 16 are substantially overstated due to the high proportion of unlicensed drivers involved.

Sex of driver

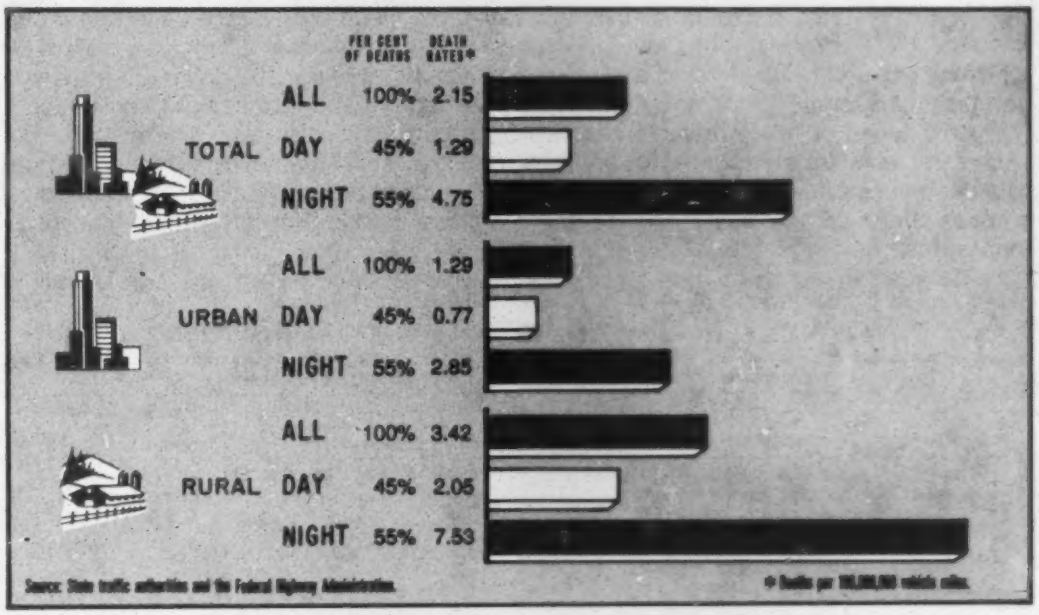
Of the estimated 167,655,000 licensed drivers in 1990, about 86,460,000 (52 per cent) were males and 81,195,000 (48 per cent) were females. Males account for about 71 per cent of the miles driven each year, according to the latest estimates, and females for 29 per cent. At least part of the difference in involvement rates, cited below, may be due to differences in the time, place, and circumstances of driving.

For fatal accidents, males have higher involvement rates than females. About 46,800 male drivers and 15,400 female drivers were involved in fatal accidents in 1990. The involvement rates per one billion miles driven were 31 for males and 24 for females.

For all accidents, females have higher involvement rates than males. About 12,170,000 male drivers and 7,630,000 female drivers were involved in all accidents in 1990. Their involvement rates per ten million miles driven were 80 and 121, respectively.

Deaths and death rates by day and night

Motor-vehicle deaths and the mileage death rates are sharply higher at night, as noted in the chart below. In both urban and rural places, the mileage death rates at night are more than three times the day rates.



Hourly Distribution of Accidents by Day of Week, 1990

Hour Beginning	Fatal Accidents					All Accidents				
	Total	Mon.-Thurs.	Fri.	Sat.	Sun.	Total	Mon.-Thurs.	Fri.	Sat.	Sun.
All Hours . . .	*100.0%*	*46.3%*	*17.2%*	*20.7%*	*15.8%*	*100.0%*	*55.2%*	*18.4%*	*15.5%*	*10.9%*
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Midnight	5.3	4.1	4.1	7.3	7.8	2.4	1.6	1.6	4.4	5.3
1:00 a.m.	5.5	3.8	3.9	8.2	8.8	2.3	1.4	1.5	4.3	5.7
2:00 a.m.	5.3	3.2	4.3	8.1	8.9	2.1	1.2	1.3	4.0	5.1
3:00 a.m.	3.1	2.0	2.1	4.1	5.9	1.3	0.7	0.8	2.4	3.3
4:00 a.m.	2.1	1.3	1.5	3.5	3.3	0.9	0.6	0.6	1.6	2.1
5:00 a.m.	2.6	2.5	2.1	2.8	3.4	1.1	1.0	0.8	1.4	1.6
6:00 a.m.	3.0	3.9	2.4	2.4	1.8	2.2	2.6	2.0	1.4	1.5
7:00 a.m.	3.1	4.2	3.0	2.0	1.3	4.5	6.1	4.4	1.8	1.6
8:00 a.m.	2.6	3.4	2.4	1.7	1.6	4.3	5.4	4.1	2.5	1.7
9:00 a.m.	2.3	2.7	2.2	2.0	1.9	3.6	3.9	3.2	3.5	2.6
10:00 a.m.	2.7	2.9	2.7	2.6	2.3	4.1	4.2	3.7	4.5	3.4
11:00 a.m.	3.3	4.2	2.8	2.4	2.2	5.0	5.1	4.8	5.5	3.9
Noon.	3.4	3.9	3.2	2.5	3.2	5.8	6.0	5.8	6.0	5.6
1:00 p.m.	3.7	4.4	3.4	3.4	2.6	5.6	5.6	5.4	5.7	5.7
2:00 p.m.	4.2	5.1	3.6	3.0	3.8	6.2	6.4	6.2	5.7	5.8
3:00 p.m.	5.1	6.1	5.2	3.7	3.5	7.8	8.5	8.2	5.8	6.2
4:00 p.m.	5.0	5.7	5.1	4.4	3.9	8.1	8.8	8.7	6.0	6.3
5:00 p.m.	5.1	5.5	5.1	4.1	5.2	8.2	9.0	8.6	5.8	6.6
6:00 p.m.	5.7	5.7	6.1	5.2	5.7	6.0	6.0	6.3	5.6	6.2
7:00 p.m.	5.2	5.3	6.0	4.3	5.6	4.6	4.2	4.9	4.9	5.2
8:00 p.m.	5.0	5.0	4.9	5.1	4.9	3.8	3.4	4.1	4.3	4.5
9:00 p.m.	5.6	5.1	7.5	5.6	5.1	3.7	3.3	4.3	4.3	4.1
10:00 p.m.	5.4	5.0	7.4	5.5	4.0	3.3	2.7	4.3	4.2	3.3
11:00 p.m.	5.7	5.0	9.0	6.1	3.3	3.1	2.3	4.4	4.4	2.7

Source: Based on reports from 14 state traffic authorities.

Deaths by day and month

Motor-vehicle death totals vary sharply for different days of the week and different months of the year. Totals run above average from Friday through Sunday, with fatalities peaking on Saturday. Deaths also run higher from May through October.

The figures shown below are "complete" deaths, which include all motor-vehicle deaths that occur within twelve months after the day of the accident. These totals should not be compared with "immediate" death figures, such as those quoted during holiday periods. These latter totals include only those deaths that occur during the holiday period from accidents that occur during the same period, and do not include any *subsequent* deaths. (See page 66 for immediate and complete motor-vehicle deaths during holiday periods.)

Motor-Vehicle Deaths by Day and Month, 1990

Day	1990 Deaths by Day		Total Deaths by Month and Average Deaths by Day											
	%	Avg.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Total	**100%**	**46,300**	**3,450**	**3,030**	**3,560**	**3,700**	**3,970**	**4,190**	**4,430**	**4,540**	**4,140**	**3,970**	**3,700**	**3,620**
Daily Avg.		**127**	**111**	**108**	**115**	**123**	**128**	**140**	**143**	**146**	**138**	**128**	**123**	**117**
Monday	11%	98	86	83	89	95	99	108	110	113	106	99	95	90
Tuesday	11%	98	86	83	89	95	99	108	110	113	106	99	95	90
Wednesday	11%	98	86	83	89	95	99	108	110	113	106	99	95	90
Thursday	13%	116	101	99	105	112	117	128	131	133	126	117	112	107
Friday	17%	151	132	128	137	146	152	166	170	174	164	152	146	139
Saturday	21%	187	163	159	169	181	188	206	211	215	203	188	181	172
Sunday	16%	142	124	121	129	138	143	157	160	163	154	143	138	131

Source: Based on reports from 15 state traffic authorities.

Deaths and mileage death rates by month, 1986-1990

Motor-vehicle deaths in 1990 were at their lowest levels in January and February and increased to their highest level in August. Eight of the twelve months showed decreases in fatalities in 1990 compared to 1989. The 1990 fatality total of 46,300 was the lowest recorded during the five-year period.

Mileage death rates are calculated by dividing the number of deaths per month by the number of miles of vehicle travel per month. These rates generally rise during the year, with the highest mileage death rates occurring in late summer and early fall. The 1990 mileage death rate of 2.15 is the lowest rate on record.

Motor-Vehicle Deaths and Mileage Death Rates by Month, 1986-1990

Month	1990		1989		1988		1987		1986	
	Deaths	Death Rate[a]	Deaths	Death Rate[a]	Deaths	Death Rate[a]	Deaths	Death Rate[a]	Deaths	Death Rate[a]
Total	**46,300**	**2.15**	**47,100**	**2.24**	**49,078**	**2.42**	**48,290**	**2.51**	**47,865**	**2.60**
January	3,450	2.11	3,530	2.21	3,382	2.27	3,301	2.36	3,274	2.46
February	3,030	1.97	3,090	2.11	3,129	2.21	2,997	2.20	2,814	2.28
March	3,560	1.98	3,660	2.09	3,595	2.14	3,517	2.23	3,559	2.35
April	3,700	2.06	3,770	2.16	3,808	2.28	3,621	2.27	3,607	2.40
May	3,970	2.10	3,910	2.12	4,220	2.37	4,264	2.54	4,331	2.70
June	4,190	2.21	3,980	2.16	4,319	2.42	4,279	2.55	4,460	2.75
July	4,430	2.26	4,390	2.30	4,639	2.51	4,472	2.54	4,704	2.75
August	4,540	2.29	4,370	2.25	4,683	2.54	4,815	2.71	4,895	2.81
September	4,140	2.31	4,170	2.35	4,345	2.54	4,300	2.62	4,197	2.70
October	3,970	2.19	4,360	2.39	4,567	2.61	4,535	2.72	4,244	2.66
November	3,700	2.17	3,800	2.24	4,005	2.46	4,169	2.68	3,920	2.65
December	3,620	2.15	4,070	2.43	4,386	2.66	4,020	2.58	3,860	2.58

Source: Deaths—National Center for Health Statistics (1986-1988), and National Safety Council estimates (1989 revised; 1990 preliminary). Mileage—Federal Highway Administration, *Traffic Volume Trends*.
[a]Deaths per 100,000,000 vehicle miles.

Type of accident—urban and rural places

Motor-vehicle deaths occur more frequently in rural areas, but injuries occur more often in urban locations. With specific types of accidents, however, the urban-rural proportions vary considerably. For example, although about one third of all motor-vehicle deaths occur in urban places, more than one half of all pedestrian deaths and almost one half of all pedalcycle deaths occur in such areas. However, eleven times as many noncollision deaths and most collisions with railroad trains happen in rural places. For all locations, persons aged 15 to 44 years old account for 61 per cent of all motor-vehicle deaths. Other urban-rural and age differences are noted in the tables below.

Motor-Vehicle Deaths and Injuries by Type of Accident, 1990

Type of Accident	Deaths			Nonfatal Injuries		
	Total	Urban	Rural	Total	Urban	Rural
Total	**46,300**	**16,500**	**29,800**	**1,700,000**	**1,100,000**	**600,000**
Collision with—						
Pedestrian	7,400	4,400	3,000	55,000	45,000	10,000
Other motor vehicle	19,400	6,700	12,700	1,280,000	900,000	380,000
Railroad train	600	100	500	3,000	1,000	2,000
Pedalcycle	1,000	400	600	40,000	28,000	12,000
Animal, animal-drawn vehicle	100	([a])	100	7,000	1,000	6,000
Fixed object	12,900	4,500	8,400	230,000	110,000	120,000
Noncollision	4,900	400	4,500	85,000	15,000	70,000

Source: National Safety Council estimates, based on reports from state traffic authorities. Procedures for estimating deaths and injuries for certain accident types were changed for the 1990 edition and are not comparable to those in previous editions.
[a]Less than 5.

Motor-Vehicle Deaths and Injuries by Type, Location, and Age, 1990

Type of Accident	All Ages	0-4 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65-74 Years	75 Years and Over
				DEATHS				
TOTAL	**46,300**	**1,100**	**2,000**	**12,300**	**16,000**	**7,400**	**3,500**	**4,000**
Pedestrian	7,400	400	650	850	2,200	1,500	700	1,100
Pedalcycle[a]	1,000	30	350	170	270	110	40	30
Other types	37,900	670	1,000	11,280	13,530	5,790	2,760	2,870
Total—Urban	**16,500**	**600**	**600**	**4,100**	**4,900**	**2,700**	**1,500**	**2,100**
Pedestrian	4,400	330	410	390	1,060	930	440	840
Pedalcycle[a]	400	20	170	60	100	20	10	20
Other types	11,700	250	20	3,650	3,740	1,750	1,050	1,240
Total—Rural	**29,800**	**500**	**1,400**	**8,200**	**11,100**	**4,700**	**2,000**	**1,900**
Pedestrian	3,000	70	240	460	1,140	570	260	260
Pedalcycle[a]	600	10	180	110	170	90	30	10
Other types	26,200	420	980	7,630	9,790	4,040	1,710	1,630
				INJURIES				
TOTAL	**1,700,000**	**50,000**	**120,000**	**530,000**	**630,000**	**240,000**	**80,000**	**50,000**
Pedestrian	55,000	4,800	13,700	10,100	13,200	7,900	2,600	2,700
Pedalcycle[a]	40,000	500	20,700	7,800	8,800	1,600	400	200
Other types	1,605,000	44,700	85,600	512,100	608,000	230,500	77,000	47,100
Total—Urban	**1,100,000**	**35,000**	**75,000**	**330,000**	**410,000**	**160,000**	**55,000**	**35,000**
Pedestrian	45,000	4,100	11,500	7,800	10,300	6,800	2,200	2,300
Pedalcycle[a]	28,000	300	15,200	5,000	6,200	1,000	200	100
Other types	1,027,000	30,600	48,300	317,200	393,500	152,200	52,600	32,600
Total—Rural	**600,000**	**15,000**	**45,000**	**200,000**	**220,000**	**80,000**	**25,000**	**15,000**
Pedestrian	10,000	700	2,200	2,300	2,900	1,100	400	400
Pedalcycle[a]	12,000	200	5,500	2,800	2,600	600	200	100
Other types	578,000	14,100	37,300	194,900	214,500	78,300	24,400	14,500

Source: National Safety Council estimates based on reports from state traffic authorities. Procedures for estimating deaths and injuries for certain accident types were changed for the 1990 edition and are not comparable to those in previous editions.
[a]Pedalcycle excludes mopeds.

Vehicle movement in accidents

In both urban and rural areas, collision between vehicles is the most common type of fatal accident, as well as the most frequent kind of accident overall. "Other collisions" (fixed objects, pedalcycles and railroad trains) are the next most important type for both locations. Among fatal two-vehicle collisions, head-on ranks highest in rural areas, while angle collisions are most important in urban locations.

Numbers of Accidents, Total, and by Selected Movement, 1990

Vehicle Movement	Fatal Accidents			All Accidents		
	Total	Urban	Rural	Total	Urban	Rural
Total Accidents	**41,200**	**14,700**	**26,500**	**11,500,000**	**7,740,000**	**3,760,000**
Pedestrian	7,200	4,200	3,000	70,000	50,000	20,000
Two-vehicle collision total	15,800	5,700	10,100	9,160,000	6,840,000	2,320,000
Angle collision	*5,200*	*2,200*	*3,000*	*2,440,000*	*1,920,000*	*520,000*
Head-on collision	*4,600*	*1,000*	*3,600*	*280,000*	*160,000*	*120,000*
Rear-end collision	*1,800*	*700*	*1,100*	*2,200,000*	*1,570,000*	*630,000*
Other two-vehicle collision	*4,200*	*1,800*	*2,400*	*4,240,000*	*3,190,000*	*1,050,000*
Other collision total	13,400	4,400	9,000	1,560,000	780,000	780,000
Noncollision total	4,800	400	4,400	710,000	70,000	640,000

Source: Based on reports from state traffic authorities. Procedures for estimating deaths and injuries for certain accident types were changed for the 1990 edition and are not comparable to those in previous editions.

Improper driving

In most motor-vehicle accidents, factors are present relating to the driver, the vehicle and the road, and it is the interaction of these factors which often sets up the series of events that results in an accident. The table below relates only to the driver, and shows the principal kinds of improper driving in accidents in 1990.

Exceeding the posted speed limit or driving at an unsafe speed was the most common error in rural accidents of all severities and in fatal urban accidents. Right-of-way violations predominated in urban injury accidents.

While some drivers were under the influence of alcohol or other drugs, this represents the driver's physical condition—not a driving error. For this reason, accidents in which a driver was reported to be under the influence are classified under "no improper driving." See page 56 for a discussion of alcohol-impaired drivers involved in traffic accidents in 1989 and trends in alcohol-related fatal accidents.

Correcting the improper practices listed below could reduce the number of accidents. This does not mean, however, that road and vehicle conditions can be disregarded.

Improper Driving Reported in Accidents, 1990

Kind of Improper Driving	Fatal Accidents			Injury Accidents			All Accidents		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Improper driving	**65.8**	**64.6**	**67.9**	**77.8**	**79.5**	**76.8**	**77.8**	**78.6**	**75.4**
Speed too fast or unsafe	24.9	24.1	25.9	20.2	19.5	26.0	16.3	15.7	22.4
Right of way	14.0	18.9	11.6	25.7	30.1	17.3	24.1	27.1	16.8
Failed to yield	*9.6*	*12.2*	*8.2*	*18.3*	*20.1*	*13.7*	*18.2*	*19.5*	*13.7*
Passed stop sign	*2.5*	*2.6*	*2.4*	*2.4*	*2.6*	*2.0*	*1.9*	*2.0*	*1.7*
Disregarded signal	*1.9*	*4.1*	*1.0*	*5.0*	*7.4*	*1.5*	*4.0*	*5.6*	*1.4*
Drove left of center	8.1	2.5	9.5	2.7	1.1	5.1	2.4	1.3	4.6
Improper overtaking	3.8	3.1	5.1	1.8	1.6	2.6	2.3	2.2	2.9
Made improper turn	0.4	0.4	0.3	1.6	1.6	0.9	2.6	2.7	1.4
Followed too closely	0.7	0.6	0.5	7.6	7.4	3.8	8.7	7.6	4.5
Other improper driving	14.0	15.1	15.1	18.3	18.2	21.1	21.3	21.9	22.8
No improper driving stated	**34.2**	**35.4**	**32.1**	**22.2**	**20.5**	**23.2**	**22.2**	**21.4**	**24.6**

Source: Based on reports from 15 state traffic authorities.

Type of motor vehicle

The types of vehicles listed in the table below are classified by body style, not by vehicle use. The truck or truck tractor category includes commercial trucks, as well as light trucks such as pick-ups and vans used as noncommercial passenger vehicles.

In 1990, passenger cars comprised 75 per cent of the registered vehicles and were involved in less than their share of the fatal accidents (61 per cent). Trucks comprised 23 per cent of the registered vehicles and were involved in 30 per cent of the fatal accidents. Data from seven states indicates that light trucks (under 10,000 lbs. gross vehicle weight) accounted for 71 per cent of the fatal truck accidents and 83 per cent of all truck accidents. Light trucks made up 84 per cent of truck registrations and 19 per cent of all motor-vehicle registrations.

Types of Motor Vehicles Involved in Accidents, 1990

Type of Vehicle	In Fatal Accidents		In All Accidents		Per Cent of Total Vehicle Registrations[a]	No. of Occupant Fatalities
	Number	%	Number	%		
All Types	**62,200**	**100.0%**	**19,800,000**	**100.0%**	**100.0%**	**37,800**[b]
Passenger cars	38,100	61.2	14,320,000	72.3	74.5	25,700
Trucks	18,900	30.4	4,390,000	22.2	22.9	8,200
Truck or truck tractor	*14,800*	*23.8*	*3,960,000*	*20.0*	*22.1*	(c)
Truck tractor with semi-trailer	*3,600*	*5.8*	*330,000*	*1.7*	*0.8*	(c)
Other truck combinations	*500*	*0.8*	*100,000*	*0.5*		(c)
Farm tractors, equipment	100	0.2	15,000	0.1	(c)	50
Taxicabs	100	0.2	25,000	0.1	0.1	40
Buses, commercial	200	0.3	50,000	0.3	0.1	10
Buses, school	100	0.2	40,000	0.2	0.2	30
Motorcycles	2,800	4.5	160,000	0.8	2.2	2,800
Motor scooters, motor bikes	100	0.2	20,000	0.1		100
Other[d]	1,800	2.8	780,000	3.9	(c)	870

Source: Based on reports from 19 state traffic authorities. Vehicle registrations based on data from Federal Highway Administration and International Taxicab Association. Procedures for estimating certain types of accidents were changed for the 1990 edition and are not comparable to those in previous editions.

[a]Percentage figures are based on numbers of vehicles and do not reflect miles traveled or place of travel, both of which affect accident experience.

[b]In addition to these occupant fatalities, there were 7,400 pedestrian, 1,000 pedalcyclist, and 100 other deaths.

[c]Data not available.

[d]Includes fire equipment, ambulances, special vehicles, other.

Motorcycles

The number of registered motorcycles in the U.S. totaled about 4,274,000 in 1990, compared to approximately 5,500,000 a decade earlier. Although motorcycles accounted for only about 2 per cent of the total 194,502,000 vehicle registrations in 1990, they were overrepresented in the distribution of fatalities by type of vehicle. Of the 37,800 occupant deaths in motor-vehicle accidents in 1990, about 2,900 (8 per cent) were motorcycle riders. More than 80,000 riders and passengers were injured in 1989, according to the National Highway Traffic Safety Administration's General Estimates System (GES). GES data also indicate that 57 per cent of the injuries were due to collisions with other motor vehicles, while 21 per cent resulted from noncollision accidents and 15 per cent resulted from collisions with fixed objects.

Motorcycles traveled an estimated 10.8 billion miles in 1990. The 1990 mileage death rate for motorcycle riders is estimated to be about 27 occupant deaths per 100,000,000 miles of motorcycle travel, about 17 times the mileage death rate for occupants of other types of vehicles (passenger autos, trucks, buses, etc.). The rate for other vehicles is about 1.6 occupant deaths per 100,000,000 vehicle miles of travel.

Occupant protection requirements for motorcyclists vary by state. Currently only three states, Colorado, Illinois, and Iowa, have no requirements for safety helmet usage. Twenty-four other states require helmet usage only for those under a specific age (typically 18), only for passengers, or require possession but not usage. Twenty-three states and the District of Columbia require usage by all riders.

Pedestrians

More than half of all pedestrian deaths and injuries occur when pedestrians cross or enter streets. More than one third occur between intersections, but the proportion varies for persons of different ages—from a low of about 26 per cent for those 20 to 24 years old to a high of almost 48 per cent for children 5 to 9.

Deaths and Injuries of Pedestrians by Age and Action, 1990

Actions	Age of Persons Killed or Injured								
	All Ages	Under 5	5-9	10-14	15-19	20-24	25-44	45-64	65 and Over
All Actions	*100.0%*	*6.0%*	*13.3%*	*10.5%*	*10.3%*	*9.0%*	*29.0%*	*11.9%*	*10.0%*
Total Pedestrians	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Crossing or entering	52.6	50.3	61.9	59.7	44.9	43.4	46.7	56.9	62.1
—at intersection	*19.0*	*7.5*	*14.0*	*19.5*	*17.6*	*17.3*	*18.7*	*24.4*	*29.4*
—between intersections	*33.6*	*42.8*	*47.9*	*40.2*	*27.3*	*26.1*	*28.0*	*32.5*	*32.7*
Walking in roadway	10.2	2.9	3.1	8.3	15.0	14.1	13.1	10.1	8.9
—with traffic	*6.8*	*1.9*	*1.4*	*5.5*	*10.4*	*9.5*	*9.1*	*6.2*	*5.8*
—against traffic	*3.4*	*1.0*	*1.7*	*2.8*	*4.6*	*4.6*	*4.0*	*3.9*	*3.1*
Standing in roadway	6.6	7.3	3.5	4.1	9.1	9.7	8.4	5.9	3.5
Pushing or working on vehicle in roadway	1.8	0.2	0.1	0.3	2.3	4.2	2.6	1.7	1.2
Other working in roadway	1.4	0.1	0.1	0.1	0.9	2.2	2.9	2.2	0.4
Playing in roadway	2.0	8.1	6.3	4.0	1.2	0.6	0.2	0.1	0.3
Other in roadway	20.9	27.7	23.0	19.6	21.1	21.1	20.4	18.3	19.6
Not in roadway	4.5	3.4	2.0	3.9	5.5	4.7	5.7	4.8	4.0

Source: Based on death and injury reports from 15 state traffic authorities.

Pedalcycle accidents

Since 1940, the number of pedalcycle-motor-vehicle deaths has increased about 33 per cent. The number of pedalcycles in use has increased thirteenfold so that the death rate (number of deaths per 100,000 pedalcycles in use) is one tenth the rate in 1940. However, the proportion of deaths occurring to adults has steadily increased since 1960.

Pedalcycle Rates and Deaths by Age, 1940-1990

Year	Pedalcycles[a] (millions)	Deaths	Death Rate[b]	Per Cent of Deaths by Age			
				All Ages	0-14	15-24	25 & Over
1940	7.8	750	9.59	100%	48	39	13
1945	9.0	500	5.55	100%	56	22	22
1950	13.8	440	3.18	100%	82	9	9
1955	23.1	410	1.78	100%	71	12	17
1960	28.2	460	1.63	100%	78	9	13
1965	38.8	680	1.75	100%	64	18	18
1970	56.5	780	1.38	100%	66	15	19
1975	95.0	1,000	1.05	100%	49	28	23
1980	82.3	1,200	1.46	100%	35	36	29
1981	84.3	1,200	1.42	100%	36	35	29
1982	84.1	1,100	1.31	100%	35	27	38
1983	85.8	1,100	1.28	100%	40	29	31
1984	88.6	1,100	1.24	100%	39	27	34
1985	92.7	1,100	1.19	100%	49	24	27
1986	97.0	1,100	1.13	100%	32	35	33
1987	100.2	1,000[c]	1.00[c]	100%	41[c]	27[c]	32[c]
1988	100.7	1,000	0.99	100%	40	24	36
1989	100.6	1,100	1.09	100%	43	20	37
1990	102.4	1,000	0.98	100%	38	17	45

Source: National Center for Health Statistics, state traffic authorities and National Safety Council estimates.
[a]Pedalcycles in use for a given year is the ten-year total (that year and the previous nine years) of domestic production plus imports less exports.
[b]Deaths per 100,000 pedalcycles in use.
[c]Data for 1987 and later are not comparable to prior years due to changes in estimating procedures.

Motor-vehicle deaths on major holidays

Looking at the holiday periods excluding Thanksgiving, actual immediate deaths during the three-year period, 1988-1990, were 1 per cent higher than would have occurred during similar nonholiday periods. For different times of the year, however, there is much variation in holiday fatalities compared to nonholidays. During the Summer holidays—Memorial Day, Fourth of July, and Labor Day—fatalities over the three-year period were 8 per cent higher than normal. During Winter holidays—Christmas and New Year's—fatalities were 9 per cent lower than normal. Deaths during the Thanksgiving holiday were not comparable for the three-year period due to missing 1990 data.

	Memorial Day		Fourth of July		Labor Day		Thanksgiving		Christmas		New Year's	
Year	Immed. Deaths[a]	Total Deaths	Immed. Deaths[a]	Total Deaths	Immed. Deaths[a]	Total Deaths	Immed. Deaths[a]	Total Deaths	Immed. Deaths[a]	Total Deaths	Immed. Deaths[a]	Total Deaths
1981	420 (3)[b]	560	578 (3)[b]	770	473 (3)[b]	630	442 (4)[b]	550	354 (3)[b]	470	338 (3)[b]	450
1982	341 (3)	460	470 (3)	630	492 (3)	660	433 (4)	540	346 (3)	460	282 (3)	380
1983	437 (3)	580	447 (3)	600	480 (3)	640	400 (4)	500	238 (3)	320	274 (3)	370
1984	378 (3)	500	...[c]	...	451 (3)	600	402 (4)	500	537 (4)	670	366 (4)	460
1985	411 (3)	550	492 (4)	620	439 (3)	590	390 (4)	490	168 (2)	240	202 (2)	290
1986	435 (3)	580	450 (3)	600	487 (3)	650	443 (4)	550	380 (4)	480	356 (4)	480
1987	416 (3)	550	415 (3)	550	453 (3)	600	503 (4)	630	389 (4)	490	375 (4)	470
1988	404 (3)	540	463 (3)	620	422 (3)	560	454 (4)	570	386 (3)	510	317 (3)	420
1989	441 (3)	590	550 (4)	690	431 (3)	580	406 (4)	510	372 (3)	500	289 (3)	390
1990	451 (3)	600	...[c]	.	463 (3)	620	386 [d]	480[d]	390 (4)	490	320 (4)	400

Source: Immediate deaths, press associations; total deaths, National Safety Council estimates.

[a]Immediate deaths are those which occurred by 11:59 p.m. of the last day of the holiday period. Total deaths include immediate deaths and an estimate of delayed deaths—those that occur within twelve months after the accident.

[b]Figures in parentheses are the number of full days in each holiday period. In addition, deaths that occur after 6:00 p.m. on the preceding day, are charged to the holiday.

[c]One-day holiday—no estimate made.

[d]Data for Texas were not reported.

Milestones in motor-vehicle deaths

The world's first motor-vehicle death probably occurred in London, England, on August 17, 1896. The first motor-vehicle death in the United States reportedly occurred in New York City on September 13, 1899.

Since that first motor-vehicle death in New York, more than 2,800,000 people have died in motor-vehicle accidents in the United States. Based on historical figures, the 1,000,000th motor-vehicle death occurred in 1952 and the 2,000,000th occurred in 1974.

If the current annual trend in motor-vehicle deaths continues, the 3,000,000th death will probably occur in 1993 or 1994.

Residence of driver

According to 1990 data from five state traffic authorities, about 88 per cent of the drivers involved in fatal accidents were residents of the state in which the accident occurred; 72 per cent of them were local residents (less than 25 miles from home), and 17 per cent resided elsewhere in the state. About 94 per cent of the drivers in all accidents and injury accidents were residents of the state where the accident occurred.

Residence of Driver in Motor-Vehicle Traffic Accidents, 1990

Residence	Fatal Accidents	Injury Accidents	All Accidents
Total	**100.0%**	**100.0%**	**100.0%**
Resident of state in which accident happened	88.8	94.3	93.9
Local resident[a]	*72.3*	*85.0*	*84.4*
Residing elsewhere in the state	*16.5*	*9.3*	*9.5*
Nonresident of state in which accident happened	11.2	5.7	6.1

Source: Based on reports from five state traffic authorities.

[a]Less than 25 miles from home.

Nations

Death totals of various nations are difficult to compare due to differences in volume and kinds of traffic, numbers of vehicles, population density, definitions of which deaths to include, and other factors. (The footnote states definition differences.) The population rates shown below provide one basis for comparison but are not as useful as rates based on mileage, which are not available for all countries. The ratios of population to vehicles indicate the relative mobility or dependence of the population on the motor vehicle as a means of transportation. Thus, a higher population to vehicle or car ratio means less mobility.

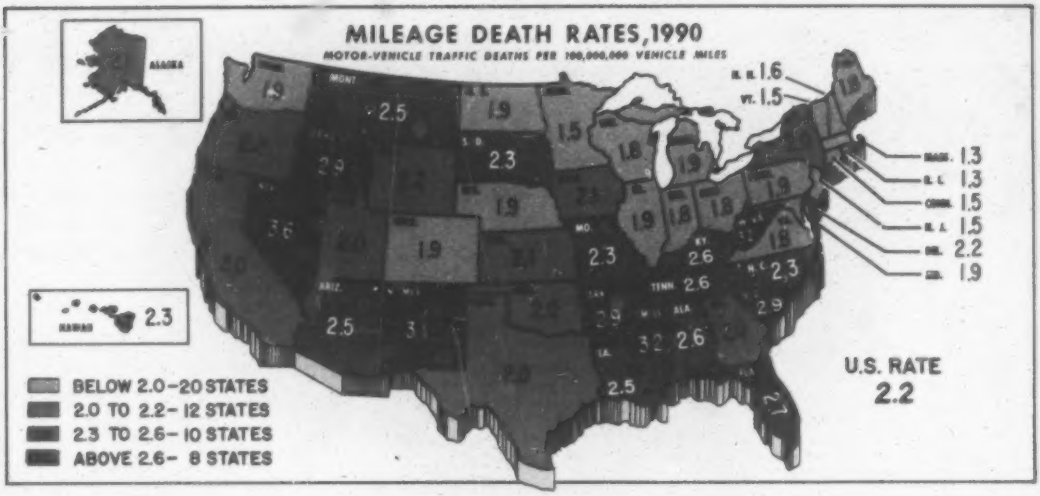
Motor-Vehicle Deaths, Rates, and Vehicle Registrations by Nation

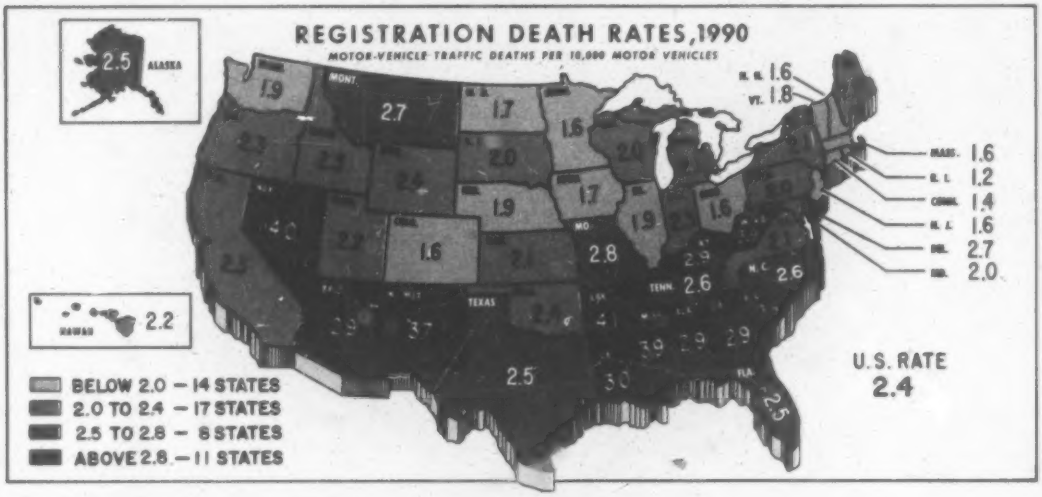
Nation	Motor-Vehicle Traffic Deaths			1989 Vehicle Registrations			
	Year	Number	Rate[a]	All Vehicles	Pop. Per Veh.	Passenger Cars	Pop. Per Car
Syrian Arab Republic	1985	176	1.7	256,173	49	117,570	106
Hong Kong	1987	283	5.0	350,812	16	213,182	27
Chile	1987	879	7.0	990,000	13	690,000	19
Thailand	1987	4,441	8.3	2,233,466	25	816,693	67
Norway	1988	363	8.6	1,933,085	2.2	1,612,674	2.6
Dominican Republic	1985	557	8.9	186,000	39	114,000	64
Singapore	1987	233	8.9	393,955	6.9	271,158	10
Netherlands	1988	1,316	8.9	5,928,000	2.5	5,371,000	2.8
Sweden	1987	764	9.1	3,887,473	2.2	3,578,042	2.3
England, Wales	1989	4,802	9.5	...	...	...	...
Uruguay	1987	290	9.5	250,000	12	170,000	18
Argentina	1986	3,075	10.0	5,600,000	5.8	4,088,000	7.9
Israel	1987	463	10.6	884,000	4.9	739,000	5.9
Paraguay	1986	241	10.6	95,000	49	65,000	72
Scotland	1989	556	10.9	...	...	...	...
Czechoslovakia	1989	1,746	11.2	3,382,140	4.6	3,122,307	5.0
East Germany	1989	1,909	11.5	4,368,700	3.8	3,898,900	4.3
Northern Ireland	1989	183	11.6	...	...	...	...
Japan	1989	14,276	11.7	55,093,128	2.2	32,621,046	3.8
Costa Rica	1988	352	12.3	290,000	10	165,000	18
West Germany	1989	7,615	12.3	32,066,513	1.9	30,152,399	2.0
Finland	1988	627	12.7	2,183,625	2.3	1,927,488	2.6
Ireland	1988	458	12.9	989,674	3.6	773,396	4.6
Bulgaria	1989	1,173	13.0	1,397,971	6.4	1,234,006	7.3
Denmark	1988	723	14.1	1,900,024	2.7	1,597,341	3.2
Switzerland	1989	939	14.1	3,177,993	2.1	2,916,959	2.3
Canada	1988	3,971[b]	15.3	15,728,000	1.7	11,210,000	2.4
Yugoslavia	1988	3,626	15.4	4,121,400	5.8	3,225,000	7.4
Italy	1988	8,885[c]	15.5	26,382,000	2.2	24,300,000	2.4
Spain	1988	6,212[d]	16.1	13,736,980	2.9	11,467,727	3.5
Panama	1987	388	17.1	225,877	11	176,708	14
France	1988	10,165[e]	18.2	27,758,000	2.0	23,010,000	2.4
Puerto Rico	1987	652	18.3	1,508,048	2.2	1,304,733	2.5
Kuwait	1987	343	18.3	610,492	3.4	477,735	4.4
Australia	1988	3,078	18.6	9,489,500	1.8	7,442,200	2.2
Greece	1988	1,863	18.6	2,358,265	4.3	1,609,212	6.3
Austria	1989	1,460	19.2	3,159,177	2.4	2,902,949	2.6
United States	**1988**	**48,024[b]**	**19.5**	**187,260,547**	**1.3**	**143,081,443**	**1.7**
Poland	1989	7,452	19.6	5,910,500	6.5	4,845,105	7.9
Ecuador	1988	2,037	20.0	235,000	45	70,000	150
Belgium	1986	2,057[c]	20.9	4,118,826	2.4	3,897,353	2.7
Hungary	1989	2,289	21.6	2,055,384	5.1	1,730,416	6.1
New Zealand	1987	815	24.6	1,865,000	1.8	1,550,000	2.2
Portugal	1989	2,795	27.1	1,908,000	5.5	1,474,000	7.1

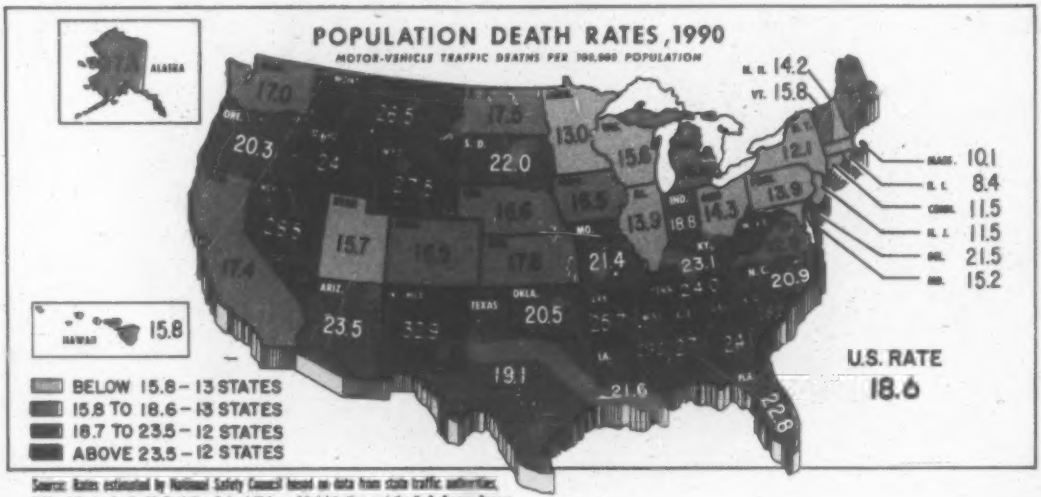
Source: Motor-vehicle traffic deaths—World Health Organization. Vehicle registrations—Motor Vehicle Manufacturers Association of the U.S., Inc., *Motor Vehicle Facts and Figures, 1991 Edition.* Used with permission.

[a]Deaths per 100,000 population.

DEATH DEFINITION: In general, deaths are included if they occur within thirty days after the accident, but other time periods are as follows: [b]one year, [c]at accident scene only, [d]24 hours, [e]three days.







Source: Rates estimated by National Safety Council based on data from state traffic authorities, National Center for Health Statistics, Federal Highway Administration, and the U. S. Census Bureau.

Motor-Vehicle Deaths by State, 1987-1990

(Population Death Rates for 1990 by place of accident are shown on page 68)

State	Motor-Vehicle *Traffic* Deaths (Place of Accident)				*Total* Motor-Vehicle Deaths[a] (Place of Residence)			
	Number		Mileage Rate[b]		Number		Population Rate[b]	
	1990	1989	1990	1989	1988[c]	1987	1988	1987
Total U.S.[a]	**46,300**	**47,100**	**2.2**	**2.2**	**49,078**	**48,290**	**20.0**	**19.8**
Alabama	1,095	1,025	2.6	2.5	1,150	1,185	28.0	29.0
Alaska	95	84	2.1	2.2	106	90	20.2	17.1
Arizona	863	884	2.5	2.5	926	925	26.5	27.3
Arkansas	604	648	2.9	3.2	653	658	27.3	27.6
California	5,173	5,105	2.0	2.0	5,632	5,774	19.9	20.9
Colorado	543	522	1.9	1.9	564	615	17.1	18.7
Connecticut	378	406	1.5	1.6	509	464	15.7	14.5
Delaware	143	118	2.2	1.8	156	152	23.6	23.6
Dist. of Columbia	55	75	1.6	2.2	80	82	13.0	13.2
Florida	2,951	3,016	2.7	2.8	3,102	2,805	25.1	23.3
Georgia	1,563	1,632	2.0	2.2	1,750	1,618	27.6	26.0
Hawaii	175	147	2.3	1.9	146	134	13.3	12.4
Idaho	243	238	2.9	2.8	243	263	24.2	26.4
Illinois	1,589	1,748	1.9	2.2	2,052	1,835	17.7	15.8
Indiana	1,044	973	1.8	1.7	1,113	1,127	20.0	20.4
Iowa	459	511	2.1	2.3	577	508	20.4	17.9
Kansas	442	426	2.1	1.9	511	534	20.5	21.6
Kentucky	850	782	2.6	2.4	878	883	23.6	23.7
Louisiana	912	857	2.5	2.3	966	867	21.9	19.4
Maine	212	190	1.8	1.6	246	217	20.4	18.3
Maryland	726	750	1.9	1.9	804	815	17.4	18.0
Massachusetts	607	700	1.3	1.5	785	748	13.3	12.8
Michigan	1,563	1,633	1.9	2.0	1,813	1,730	19.6	18.8
Minnesota	568	605	1.5	1.6	676	601	15.7	14.2
Mississippi	751	728	3.2	3.2	782	812	29.8	30.9
Missouri	1,096	1,052	2.3	2.2	1,082	1,085	21.0	21.3
Montana	212	181	2.5	2.2	196	223	24.3	27.6
Nebraska	262	296	1.9	2.1	298	296	18.6	18.6
Nevada	343	307	3.6	3.3	263	244	25.0	24.2
New Hampshire	158	190	1.6	1.9	164	174	15.1	16.5
New Jersey	886	890	1.5	1.5	1,129	1,094	14.6	14.3
New Mexico	499	538	3.1	3.4	485	525	32.2	35.0
New York	2,183	2,239	2.0	2.1	2,440	2,495	13.6	14.0
North Carolina	1,383	1,464	2.3	2.4	1,604	1,577	24.7	24.6
North Dakota	112	81	1.9	1.4	121	113	18.1	16.8
Ohio	1,550	1,700	1.8	2.0	1,799	1,831	16.6	17.0
Oklahoma	646	655	2.0	2.0	696	669	21.5	20.4
Oregon	578	630	2.2	2.4	688	642	24.9	23.6
Pennsylvania	1,646	1,877	1.9	2.2	2,007	2,069	16.7	17.3
Rhode Island	84	100	1.3	1.5	146	140	14.7	14.2
South Carolina	983	996	2.9	3.0	1,043	1,087	30.1	31.7
South Dakota	153	151	2.3	2.3	148	156	20.8	22.0
Tennessee	1,172	1,081	2.6	2.4	1,290	1,298	26.4	26.7
Texas	3,243	3,361	2.0	2.1	3,475	3,330	20.6	19.8
Utah	270	303	2.0	2.2	307	307	18.2	18.3
Vermont	89	116	1.5	2.0	115	112	20.6	20.4
Virginia	1,073	999	1.8	1.7	1,024	1,075	17.0	18.2
Washington	825	781	1.9	1.8	878	865	18.9	19.1
West Virginia	481	468	3.2	3.1	496	503	26.4	26.5
Wisconsin	763	817	1.8	1.9	841	831	17.3	17.3
Wyoming	125	127	2.2	2.2	123	107	25.7	21.8

Source: Motor-Vehicle *Traffic* Deaths are provisional counts from state traffic authorities; *Total* Motor-Vehicle Deaths are from the National Center for Health Statistics (see also p. 18).

[a]Includes both traffic and nontraffic motor-vehicle deaths. See definitions of motor-vehicle traffic and motor-vehicle nontraffic accidents on page 10.

[b]The mileage death rate is deaths per 100,000,000 vehicle miles; the population death rate is deaths per 100,000 population. Mileage death rates are National Safety Council estimates. Population rates are from the National Center for Health Statistics.

[c]Latest year available. See page 21 for comparability.

School bus accidents, 1989-1990

School bus transportation accidents killed an estimated 90 persons nationwide in the school year 1989-1990, including 35 pupils, 5 bus drivers and 50 other persons. These national estimates are projected from data received from 40 states and the District of Columbia.

Of the pupils killed, about 5 were passengers on school buses and 30 were pedestrians either approaching or leaving a loading zone. More than half of the pupil pedestrian victims were struck by the school bus which they were entering or leaving.

Injuries in school bus related accidents totaled about 14,500 of which 9,800 were students.

The table on page 71 shows certain details of the injury and property damage accidents which occurred in school year 1989-1990 or calendar year 1990. Types of school bus accidents not itemized include an estimated 300 pedestrian, 105 bicycle, and 5 railroad accidents. About seven out of ten accidents involved property damage with no injuries.

Characteristics of school bus transportation

Interpretation of school bus accident data is complicated by the many variations between state operations, by lack of standard definitions of terms, and by lack of comparable reporting by states.

The state totals in the table on page 71 are shown as reported by the states. The U.S. totals are National Safety Council estimates developed by inflating the total from reporting states to compensate for the portion from missing states. State figures are weighted based on the number of pupils transported in that state.

Terms and reporting classifications

Vehicles. Included are regular school buses and other nonfamily-owned vehicles used in transporting pupils.

Annual bus mileage. Total mileage includes deadheading (traveling with no pupil passengers) and extracurricular activity trips. Data from three states indicate that deadheading may average about 25 per cent of total mileage, ranging from practically none in some states, up to one fourth of the total bus mileage in others, depending on arrangements for driver and bus storage. Extracurricular mileage, based on 14 states, is indicated to be about 11 per cent of total mileage, also with a wide range among states. Such mileage includes athletic and field trips, shuttle service, and so on.

Pupils transported daily. A pupil is counted only once for each day transported, although usually two one-way trips or more are made daily.

Pupil passenger miles and average bus occupancy. Total pupil passenger miles cannot be computed directly from total bus mileage and pupils transported. Reports indicate average bus occupancy as upwards of 35 pupils, but it may rise or fall several times on a single route trip, as a bus in some instances may serve several schools along the route. Average occupancy for all bus mileage, including deadheading, may be only about 40 per cent of capacity. The National Safety Council estimate of total pupil passenger miles for 1990 is 74.2 billion.

Route trip. A route trip may represent (1) a one-way trip from the point where the first pupil boards the bus to the point where the last pupil leaves it, (2) a round trip, or (3) several separate trips ending at the same school(s). Miles per route trip reported for 21 states ranged from 15 to 75, averaging 43 miles. Pupils carried per route trip ranged from 15 to 75, averaging 53 pupils. Route trips per bus ranged from 1 to 5, averaging 2.1 trips daily.

School Bus Accidents by State, 1989-1990

State	Total Vehicles	Annual Bus Mileage (000)	Pupils Transp. Daily	Type of School Bus Accident				Prop. Damage Only Acc.	Persons Injured	
				Total[a]	Other Veh.	Non-coll.	Fixed Obj.		Total	Pupils
U.S.[b]	380,000	3,800,000	22,000,000	29,000	23,000	500	2,300	22,000	14,500	9,800
Alabama	6,952	80,206	421,059	554	518	3	26	496	164	121
Alaska	685	5,805	45,136	126	107	1	15	107	23	20
Arizona	4,800	42,069	242,871	190	159	0	12	125	69	26
Arkansas	4,348	28,488	275,644	231	229	0	0	215	134	118
California	23,044	313,691	1,025,611	2,949	1,841	191	350	2,368	1,051	688
Colorado	4,206	45,108	240,287	195	175	1	13	152	95	54
Connecticut	5,494	...	349,000	601	560	0	29	516	142	64
Delaware	1,283	16,775	84,152	140	128	3	4	97	110	79
Dist. of Columbia	187	1,032	3,984	49	49	0	0	49	6	2
Florida	10,323	166,215	808,090	1,376	973	28	144	221	1,151	928
Georgia	9,198	98,063	880,442	586	253	0	87	374	354	210
Hawaii	...	...	...	...	...	...	...	...	...	...
Idaho	2,280	21,984	108,362	77	66	0	8	66	16	16
Illinois	...	...	...	...	...	...	...	...	...	...
Indiana	10,595	66,509	668,262	933	...	...	...	759	415	185
Iowa	6,970	60,829	244,896	464	...	...	...	419	99	57
Kansas	...	...	...	...	...	...	...	...	...	...
Kentucky	7,352	82,847	443,399	780	702	10	58	707	245	219
Louisiana	...	...	...	...	...	...	...	...	...	...
Maine	2,866	36,335	165,396	236	...	...	...	191	40	36
Maryland	5,624	93,279	468,462	1,176	1,057	4	97	1,027	532	168
Massachusetts	...	...	...	...	...	...	...	...	...	...
Michigan	...	...	...	...	...	...	...	...	...	...
Minnesota	12,109	125,780	656,249	674	631	3	23	520	329	167
Mississippi	5,319	43,014	389,090	436	391	24	20	396	51	45
Missouri	10,497	97,169	501,121	883	724	3	73	672	553	402
Montana	1,373	17,148	59,527	...	...	...	...	...	...	...
Nebraska	3,986	35,897	71,272	111	98	4	5	72	89	52
Nevada	1,107	14,875	63,640	229	146	1	35	169	63	53
New Hampshire	2,100	...	127,000	115	...	...	...	...	...	...
New Jersey	...	...	...	...	...	...	...	...	...	...
New Mexico	2,181	31,793	137,925	190	168	2	18	190	84	60
New York	35,000	181,000	2,000,000	419	347	6	15	236	584	415
North Carolina	13,231	126,354	671,952	803	692	1	3	537	60	42
North Dakota	1,864	25,467	45,757	9	8	0	0	9	0	0
Ohio	12,416	172,392	1,296,789	1,109	983	31	85	885	1,312	1,288
Oklahoma	6,706	58,827	297,377	301	251	0	17	265	104	73
Oregon	4,740	46,382	221,362	444	338	0	96	434	44	40
Pennsylvania	...	...	...	1,468	1,211	46	138	1,191	502	352
Rhode Island	...	...	...	...	...	...	...	...	...	...
South Carolina	5,568	66,868	437,615	391	317	7	51	368	622	520
South Dakota	1,692	18,329	45,000	42	38	2	0	31	18	5
Tennessee	6,636	73,655	544,904	753	596	12	98	646	183	167
Texas	26,028	256,741	1,085,483	1,781	1,582	10	65	1,061	1,739	752
Utah	1,766	21,145	143,869	99	97	1	0	99	13	12
Vermont	...	...	...	...	...	...	...	...	...	...
Virginia	10,141	90,250	754,477	989	899	1	85	810	189	153
Washington	6,900	78,128	404,000	325	309	1	8	226	232	85
West Virginia	3,665	40,581	248,947	...	...	...	...	...	14	5
Wisconsin	...	...	...	964	873	4	38	682	393	334
Wyoming	1,558	15,065	36,538	57	46	4	2	41	57	40

Source: National Safety Council survey of state departments of education and state traffic authorities. Most reports cover 1989-1990 school year or 1990 calendar year. U.S. totals are Council estimates for the calendar year 1990.

[a]Totals include additional accident types not shown separately.

[b]Procedures for estimating U.S. totals were revised for the 1985 edition. U.S. totals in this edition are not comparable to estimates prior to the 1985 edition.

Motor-Vehicle Deaths and Rates, 1913-1990

Year	No. of Deaths	No. of Vehicles (millions)	Vehicle Miles (billions)	No. of Drivers (millions)	Death Rates		
					Per 10,000 Motor Vehicles	Per 100,000,000 Vehicle Miles	Per 100,000 Population
1913	4,200	1.3	(a)	2.0	33.38	(a)	4.4
1914	4,700	1.8	(a)	3.0	26.65	(a)	4.8
1915	6,600	2.5	(a)	3.0	26.49	(a)	6.6
1916	8,200	3.6	(a)	5.0	22.66	(a)	8.1
1917	10,200	5.1	(a)	7.0	19.93	(a)	10.0
1918	10,700	6.2	(a)	9.0	17.37	(a)	10.3
1919	11,200	7.6	(a)	12.0	14.78	(a)	10.7
1920	12,500	9.2	(a)	14.0	13.53	(a)	11.7
1921	13,900	10.5	(a)	16.0	13.25	(a)	12.9
1922	15,300	12.3	(a)	19.0	12.47	(a)	13.9
1923	18,400	15.1	85	22.0	12.18	21.65	16.5
1924	19,400	17.6	104	26.0	11.02	18.65	17.1
1925	21,900	20.1	122	30.0	10.89	17.95	19.1
1926	23,400	22.2	141	33.0	10.54	16.59	20.1
1927	25,800	23.3	158	34.0	11.07	16.33	21.8
1928	28,000	24.7	173	37.0	11.34	16.18	23.4
1929	31,200	26.7	197	40.0	11.69	15.84	25.7
1930	32,900	26.7	206	40.0	12.32	15.97	26.7
1931	33,700	26.1	216	39.0	12.91	15.60	27.2
1932	29,500	24.4	200	36.0	12.09	14.75	23.6
1933	31,363	24.2	201	35.0	12.96	15.60	25.0
1934	36,101	25.3	216	37.0	14.27	16.71	28.6
1935	36,369	26.5	229	39.0	13.72	15.88	28.6
1936	38,089	28.5	252	42.0	13.36	15.11	29.7
1937	39,643	30.1	270	44.0	13.19	14.68	30.8
1938	32,582	29.8	271	44.0	10.93	12.02	25.1
1939	32,386	31.0	285	46.0	10.44	11.35	24.7
1940	34,501	32.5	302	48.0	10.63	11.42	26.1
1941	39,969	34.9	334	52.0	11.45	11.98	30.0
1942	28,309	33.0	268	49.0	8.58	10.55	21.1
1943	23,823	30.9	208	46.0	7.71	11.44	17.8
1944	24,282	30.5	213	45.0	7.97	11.42	18.3
1945	28,076	31.0	250	46.0	9.05	11.22	21.2
1946	33,411	34.4	341	50.0	9.72	9.80	23.9
1947	32,697	37.8	371	53.0	8.64	8.82	22.8
1948	32,259	41.1	398	55.0	7.85	8.11	22.1
1949	31,701	44.7	424	59.3	7.09	7.47	21.3
1950	34,763	49.2	458	62.2	7.07	7.59	23.0
1951	36,996	51.9	491	64.4	7.13	7.53	24.1
1952	37,794	53.3	514	66.8	7.10	7.36	24.3
1953	37,956	56.3	544	69.9	6.74	6.97	24.0
1954	35,586	58.6	562	72.2	6.07	6.33	22.1
1955	38,426	62.8	606	74.7	6.12	6.34	23.4
1956	39,628	65.2	631	77.9	6.07	6.28	23.7
1957	38,702	67.6	647	79.6	5.73	5.98	22.7
1958	36,981	68.8	665	81.5	5.37	5.56	21.3
1959	37,910	72.1	700	84.5	5.26	5.41	21.5
1960	38,137	74.5	719	87.4	5.12	5.31	21.2
1961	38,091	76.4	738	88.9	4.98	5.16	20.8
1962	40,804	79.7	767	92.0	5.12	5.32	22.0
1963	43,564	83.5	805	93.7	5.22	5.41	23.1
1964	47,700	87.3	847	95.6	5.46	5.63	25.0
1965	49,163	91.8	888	99.0	5.36	5.54	25.4
1966	53,041	95.9	930	101.0	5.53	5.70	27.1
1967	52,924	98.9	962	103.2	5.35	5.50	26.8
1968	54,862	103.1	1,016	105.4	5.32	5.40	27.5
1969	55,791	107.4	1,071	108.3	5.19	5.21	27.7
1970	54,633	111.2	1,120	111.5	4.92	4.88	26.8
1971	54,381	116.3	1,186	114.4	4.68	4.57	26.3
1972	56,278	122.3	1,268	118.4	4.60	4.43	26.9
1973	55,511	129.8	1,309	121.6	4.28	4.24	26.3
1974	46,402	134.9	1,290	125.6	3.44	3.59	21.8
1975	45,853	137.9	1,330	129.8	3.33	3.45	21.3
1976	47,038	143.5	1,412	133.9	3.28	3.33	21.6

See source and footnotes on page 73.

Motor-Vehicle Deaths and Rates, 1913-1990, Cont.

Year	No. of Deaths	No. of Vehicles (millions)	Vehicle Miles (billions)	No. of Drivers (millions)	Death Rates: Per 10,000 Motor Vehicles	Death Rates: Per 100,000,000 Vehicle Miles	Death Rates: Per 100,000 Population
1977	49,510	148.8	1,477	138.1	3.33	3.35	22.5
1978	52,411	153.6	1,548	140.8	3.41	3.39	23.6
1979	53,524	159.6	1,529	143.3	3.35	3.50	23.8
1980	53,172	161.6	1,521	145.3	3.29	3.50	23.4
1981	51,385	164.1	1,556	147.1	3.13	3.30	22.4
1982	45,779	165.2	1,592	150.3	2.77	2.88	19.7
1983	44,452	169.4	1,657	154.2	2.62	2.68	19.0
1984	46,263	171.8	1,718	155.4	2.69	2.69	19.6
1985	45,901	177.1	1,774	156.9	2.59	2.59	19.2
1986	47,865	181.4	1,835	159.5	2.63	2.60	19.9
1987	48,290	183.9	1,924	161.8	2.63	2.51	19.8
1988	49,078	189.0	2,026	162.9	2.60	2.42	20.1
1989	47,100	191.7	2,107	165.6	2.46	2.24	19.1
1990	46,300	194.5	2,150	167.7	2.38	2.15	18.6
			Changes				
1980 to 1990	-13%	+20%	+41%	+15%	-28%	-39%	-21%
1989 to 1990	- 2%	+ 1%	+ 2%	+ 1%	- 3%	- 4%	- 3%

Source: Deaths from National Center for Health Statistics except 1964, 1989 (revised) and 1990 (preliminary), which are National Safety Council estimates based on data from state traffic authorities. See page 21 for comparability. Motor-vehicle registrations, mileage and drivers from Federal Highway Administration.
[a]Mileage data inadequate prior to 1923.

Estimating motor-vehicle accident costs

National Safety Council estimates[a] of the per case costs of motor-vehicle-related deaths, injuries, and property damage accidents may be used by a community or state to estimate the cost of motor-vehicle accidents that occurred in 1990 within its jurisdiction. Included are the four calculable economic loss components (see pages 2-3), which are wage loss, medical expense, insurance administration cost, and motor-vehicle property damage. The estimated 1990 cost per case of these items is given below.

Death **$410,000**
Nonfatal disabling injury **$17,400**
Incapacitating injury *$38,200*
Nonincapacitating evident injury ..... *$ 8,900*
Possible injury ..... *$ 2,900*
Property damage accident (including minor injuries) **$3,500**

Cost-benefit analysis. The figures above are appropriate for measuring the economic loss to a community resulting from past motor-vehicle accidents. They should not be used, however, in computing the dollar value of future benefits due to traffic safety measures because they do not include the value of a person's natural desire to live longer or to protect the quality of one's life. That is, the economic loss estimates do not include what people are willing to pay for improved safety. Recent work has been done to create the necessary theoretical groundwork[b] and empirical valuation[c] of injury costs under the "willingness to pay" concept. These estimates should be used for cost-benefit analyses wherever feasible.

[a]National Safety Council. *Estimating the cost of accidents, 1990.* Chicago: Author, 1991.
[b]Miller, T. R. *Benefit-cost analyses of health and safety: conceptual and empirical issues.* Working paper, December 1986. Washington, DC: The Urban Institute.
[c]Rollins, J. B. and McFarland, W. F. Costs of motor vehicle accidents and injuries. In *Traffic Accident Analysis, Alcohol Involvement, and Evaluation of Highway Improvements,* Transportation Research Record 1068. Washington, DC: Transportation Research Board, National Research Council, 1986.

Motor-Vehicle Deaths by Type of Accident, 1913-1990

Year	Total Deaths	Deaths from Collision with—							Deaths from Non-collision Acci-dents	Non-traffic Deaths[2]
		Pedes-trians	Other Motor Vehicles	Rail-road Trains	Street Cars	Pedal-cycles	Animal-drawn Veh. or Animal	Fixed Objects		
1913	4,200									
1914	4,700									
1915	6,600									
1916	8,200									
1917	10,200									
1918	10,700									
1919	11,200									
1920	12,500									
1921	13,900									
1922	15,300									
1923	18,400									
1924	19,400			1,130	410					
1925	21,900			1,410	560					
1926	23,400			1,730	520					
1927	25,800	10,820	3,430	1,830	520					
1928	28,000	11,420	4,310	2,140	570			540	8,070	
1929	31,200	12,250	5,400	2,050	530			620	9,380	
1930	32,900	12,900	5,880	1,830	480			720	9,970	
1931	33,700	13,370	6,820	1,710	440			870	9,570	
1932	29,500	11,490	6,070	1,520	320	350	400	800	8,500	
1933	31,363	12,840	6,470	1,437	318	400	310	900	8,680	
1934	36,101	14,480	8,110	1,457	332	500	360	1,040	9,820	
1935	36,369	14,350	8,750	1,587	253	450	250	1,010	9,720	
1936	38,089	15,250	9,500	1,697	269	650	250	1,060	9,410	
1937	39,643	15,500	10,320	1,810	264	700	200	1,160	9,690	
1938	32,582	12,850	8,900	1,490	165	720	170	940	7,350	
1939	32,386	12,400	8,700	1,330	150	710	200	1,000	7,900	
1940	34,501	12,700	10,100	1,707	132	750	210	1,100	7,800	
1941	39,969	13,550	12,500	1,840	118	910	250	1,350	9,450	
1942	28,309	10,650	7,300	1,754	124	650	240	850	6,740	
1943	23,823	9,900	5,300	1,448	171	450	160	700	5,690	
1944	24,282	9,900	5,700	1,663	175	400	140	700	5,600	
1945	28,076	11,000	7,150	1,703	163	500	130	800	6,600	
1946	33,411	11,600	9,400	1,703	174	540	130	950	8,900	
1947	32,697	10,450	9,900	1,736	102	550	150	1,000	8,800	
1948	32,259	9,950	10,200	1,474	83	500	100	1,000	8,950	
1949	31,701	8,800	10,500	1,452	56	550	140	1,100	9,100	838
1950	34,763	9,000	11,650	1,541	89	440	120	1,300	10,600	900
1951	36,996	9,150	13,100	1,573	46	390	100	1,400	11,200	966
1952	37,794	8,900	13,500	1,429	32	430	130	1,450	11,900	970
1953	37,955	8,750	13,400	1,506	26	420	120	1,500	12,200	1,026
1954	35,586	8,000	12,800	1,289	28	380	90	1,500	11,500	1,004
1955	38,426	8,200	14,500	1,490	15	410	90	1,600	12,100	989
1956	39,628	7,900	15,200	1,377	11	440	100	1,600	13,000	888
1957	38,702	7,850	15,400	1,376	13	460	80	1,700	11,800	1,016
1958	36,981	7,650	14,200	1,316	9	450	80	1,650	11,600	929
1959	37,910	7,850	14,900	1,202	6	480	70	1,600	11,800	948
1960	38,137	7,850	14,800	1,368	5	460	80	1,700	11,900	995
1961	38,091	7,650	14,700	1,267	5	490	80	1,700	12,200	1,065
1962	40,804	7,900	16,400	1,245	3	500	90	1,750	12,900	1,029
1963	43,564	8,200	17,600	1,385	10	580	80	1,900	13,800	990
1964	47,700	9,000	19,600	1,580	5	710	100	2,100	14,600	1,123
1965	49,163	8,900	20,800	1,556	5	680	120	2,200	14,900	1,113
1966	53,041	9,400	22,200	1,800	2	740	100	2,500	16,300	1,108
1967	52,924	9,400	22,000	1,620	3	750	100	2,350	16,700	1,165
1968	54,862	9,900	22,400	1,570	4	790	100	2,700	17,400	1,061
1969	55,791	10,100	23,700	1,495	2	800	100	3,900[3]	15,700[3]	1,155
1970	54,633	9,900	23,200	1,459	3	780	100	3,800	15,400	1,140
1971	54,381	9,900	23,100	1,378	2	800	100	3,800	15,300	1,015
1972	56,278	10,300	23,900	1,260	2	1,000	100	3,900	15,800	1,064
1973	55,511	10,200	23,600	1,194	2	1,000	100	3,800	15,600	1,164
1974	46,402	8,500	19,700	1,209	1	1,000	100	3,100	12,800	1,088
1975	45,853	8,400	19,550	979	1	1,000	100	3,130	12,700	1,033
1976	47,038	8,600	20,100	1,033	2	1,000	100	3,200	13,000	1,026

See source and footnotes on page 75.

Motor-Vehicle Deaths by Type of Accident, 1913-1990, Cont.

Year	Total Deaths	Deaths from Collision with—							Deaths from Non-collision Accidents	Non-traffic Deaths[a]
		Pedestrians	Other Motor Vehicles	Railroad Trains	Street Cars	Pedalcycles	Animal-drawn Veh. or Animal	Fixed Objects		
1977	49,510	9,100	21,200	902	3	1,100	100	3,400	13,700	1,053
1978	52,411	9,600	22,400	986	1	1,200	100	3,600	14,500	1,074
1979	53,524	9,800	23,100	826	1	1,200	100	3,700	14,800	1,271
1980	53,172	9,700	23,000	739	1	1,200	100	3,700	14,700	1,242
1981	51,385	9,400	22,200	668	1	1,200	100	3,600	14,200	1,189
1982	45,779	8,400	19,800	554	1	1,100	100	3,200	12,600	1,066
1983	44,452	8,200	19,200	520	1	1,100	100	3,100	12,200	1,024
1984	46,263	8,500	20,000	630	0	1,100	100	3,200	12,700	1,055
1985	45,901	8,500	19,900	538	2	1,100	100	3,200	12,600	1,079
1986	47,865	8,900	20,800	574	2	1,100	100	3,300	13,100	998
1987	48,290	7,500[c]	20,700	554	1	1,000[c]	100	13,200[c]	5,200[c]	993
1988	49,078	7,700	20,900	638	2	1,000	100	13,400	5,300	1,054
1989	47,100	7,600	20,000	700	(b)	1,100	100	12,600	5,000	1,000
1990	46,300	7,400	19,400	600	(b)	1,000	100	12,900	4,900	1,000
		Changes in Deaths								
1980 to 1990	**-13%**	(b)	**-16%**	**-19%**	...	(b)	**0%**	(b)	(b)	**-19%**
1989 to 1990	**- 2%**	**-3%**	**- 3%**	**-14%**	...	**-9%**	**0%**	**+2%**	**-2%**	**0%**

Source: Total deaths from National Center for Health Statistics except 1964 and 1989-1990, which are National Safety Council estimates (1990 preliminary, 1989 revised) based on data from state traffic authorities and Federal Highway Administration. Most totals by type are estimated and may not add to the total deaths. See page 21 for comparability.

[a]See definition on page 105. Nontraffic deaths are included in the appropriate accident type totals in the table; in 1988, 41 per cent of the specified nontraffic deaths were pedestrians.

[b]Insufficient data for approximations.

[c]Data not available.

[d]1969 through 1986 totals are not comparable to previous years.

[e]Procedures and benchmarks for estimating deaths for certain types of accidents were changed for the 1990 edition. Estimates for 1987 and later years are not comparable to earlier years.

Automobile Occupant Injuries by Nature of Injury and Part of Body, 1988

Part of Body	All Injuries	Nature of Injury						
		Contusion	Laceration	Abrasion	Strain	Fracture	Concussion	Other, Unknown
All Injuries	*100.0%*	*40.7%*	*18.2%*	*14.0%*	*10.8%*	*6.8%*	*3.9%*	*5.7%*
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Head, skull	11.7	9.3	13.5	4.9	0.0	3.9	100.0	11.7
Face	21.6	18.3	42.4	28.2	0.2	24.2	0.0	15.3
Neck[a]	8.6	0.8	0.9	1.7	69.1	2.4	0.0	4.1
Shoulder	4.3	5.7	1.5	3.5	1.6	6.8	0.0	10.4
Arm, upper	1.8	2.2	2.3	1.8	0.2	2.2	0.0	0.6
Elbow	2.0	2.2	2.4	3.8	0.0	0.0	0.0	1.9
Forearm	2.4	2.8	2.3	3.4	0.6	3.3	0.0	0.5
Wrist, hand	5.3	3.0	10.0	6.3	0.0	9.3	0.0	12.6
Upper limb[a]	1.0	1.0	1.3	2.1	0.2	0.4	0.0	1.0
Back[a]	4.1	1.2	1.2	1.8	24.8	4.6	0.0	2.3
Chest	6.7	10.8	1.4	3.0	1.2	17.8	0.0	4.8
Abdomen	3.3	4.7	2.3	1.9	0.2	0.0	0.0	11.4
Pelvis, hip	2.9	4.4	0.5	2.1	0.1	7.1	0.0	3.6
Thigh	2.9	5.0	1.3	2.2	0.4	3.8	0.0	0.2
Knee	11.6	16.6	8.2	20.4	0.1	1.4	0.0	6.1
Leg, lower	4.0	4.8	4.2	6.1	0.4	4.9	0.0	0.9
Ankle, foot	2.7	2.2	1.7	2.7	0.2	7.4	0.0	10.0
Lower limb[a]	1.3	1.4	2.2	1.9	0.0	0.4	0.0	1.1
Whole body	1.5	2.9	0.3	1.7	0.0	0.0	0.0	0.2
Unknown region	0.4	0.5	0.1	0.5	0.7	0.1	0.0	1.2

Source: National Safety Council analysis of National Highway Traffic Safety Administration, National Accident Sampling System, Crashworthiness Data System, 1988.

[a]Back includes thoracolumbar spine. Neck includes cervical spine. Upper and lower limbs include whole or unknown part only.

Motor-Vehicle Deaths by Type and Location, 1943-1990

Year	Total Deaths[a]	Mileage Death Rate[b]	Deaths from Collisions with—						Deaths from Non-collision Accidents
			Pedestrians	Other Motor Vehicles	Railroad Trains	Pedalcycles	All Other Vehicles	Fixed Objects	
					URBAN				
1943-1947 avg.	11,370	8.1	6,920	1,640	900	[c]	[c]	240	1,190
1948-1952 avg.	10,430	4.9	5,770	1,830	740	[c]	[c]	390	1,390
1953-1957 avg.	9,730	3.6	5,190	1,980	540	[c]	[c]	500	1,270
1958-1962 avg.	10,450	3.2	4,900	2,650	450	[c]	[c]	650	1,600
1963-1967 avg.	15,100	3.4	5,750	4,720	500	[c]	[c]	930	2,840
1969	17,890	3.3	6,700	5,900	490	[c]	[c]	1,450[d]	3,000[d]
1970	17,520	3.0	6,600	5,800	480	340	3	1,400	2,900
1971	17,510	2.9	6,600	5,800	450	350	2	1,400	2,900
1972	18,210	2.7	6,800	5,900	320	600	2	1,900	2,600
1973	18,040	2.6	6,700	5,800	400	600	2	1,900	2,600
1974	16,100	2.3	5,700	5,400	400	600	1	1,900	2,100
1975	16,460	2.3	6,100	6,000	460	600	1	1,800	1,500
1976	16,750	2.1	5,900	6,000	500	550	2	1,800	2,000
1977	17,700	2.2	6,200	6,400	400	600	3	1,900	2,200
1978	18,600	2.2	6,100	6,500	400	800	1	2,100	2,700
1979	19,700	2.3	7,100	6,400	400	700	1	2,100	3,000
1980	19,500	2.2	7,000	6,800	300	800	1	1,900	2,700
1981	19,400	2.2	6,900	6,800	300	800	1	1,900	2,700
1982	17,300	1.9	6,200	6,100	200	700	1	1,700	2,400
1983	16,250	1.7	5,900	5,800	220	700	1	1,700	2,200
1984	17,130	1.7	6,200	6,400	230	700	0	1,800	1,800
1985	16,600	1.6	6,200	5,800	200	700	2	1,800	1,900
1986	17,300	1.6	6,700	6,800	100	800	2	1,800	1,100
1987	17,390	1.5	4,400[e]	7,000	150	400[e]	1	4,500[e]	900[e]
1988	17,380	1.4	4,300	7,300	240	400	2	4,500	600
1989	16,500	1.3	4,400	6,200	200	600	[c]	4,500	600
1990	16,500	1.3	4,400	6,700	100	400	[c]	4,500	400
1989-90 Change	**0%**	**0%**	**0%**	**+8%**	**-50%**	**-33%**	**...**	**0%**	**-33%**
					RURAL				
1943-1947 avg.	17,080	12.6	3,650	5,850	760	[c]	[c]	580	5,930
1948-1952 avg.	24,270	10.0	3,390	9,960	750	[c]	[c]	860	8,950
1953-1957 avg.	28,320	8.6	2,950	12,280	860	[c]	[c]	1,080	10,850
1958-1962 avg.	27,900	7.2	2,900	12,350	830	[c]	[c]	1,030	10,500
1963-1967 avg.	34,180	7.6	3,230	15,720	1,090	[c]	[c]	1,280	12,420
1969	37,900	7.2	3,400	17,800	1,000	[c]	[c]	2,450[d]	12,700[d]
1970	37,120	6.8	3,300	17,400	980	440	100	2,400	12,500
1971	36,870	6.4	3,300	17,300	920	450	100	2,400	12,400
1972	38,150	6.5	3,500	18,000	950	400	100	2,000	13,200
1973	37,470	6.2	3,500	17,800	800	400	100	1,900	13,000
1974	30,300	5.2	2,800	14,300	800	400	100	1,200	10,700
1975	29,390	4.9	2,300	13,550	520	400	100	1,300	11,200
1976	30,320	4.8	2,700	14,100	530	450	100	1,400	11,000
1977	31,800	4.9	2,900	14,800	500	500	100	1,500	11,500
1978	33,800	4.9	3,500	15,900	600	400	100	1,500	11,800
1979	33,800	5.0	2,700	16,700	400	500	100	1,600	11,800
1980	33,600	5.0	2,700	16,200	400	400	100	1,800	12,000
1981	32,000	4.7	2,500	15,400	400	400	100	1,700	11,500
1982	28,500	4.1	2,200	13,700	400	400	100	1,500	10,200
1983	27,900	4.0	2,300	13,400	300	400	100	1,400	10,000
1984	29,100	4.0	2,300	13,600	400	400	100	1,400	10,900
1985	29,340	4.0	2,300	14,100	340	400	100	1,400	10,700
1986	30,570	4.1	2,200	14,000	470	300	100	1,500	12,000
1987	30,900	4.0	3,100[e]	13,700	400	600[e]	100	8,700[e]	4,300[e]
1988	31,700	3.9	3,400	13,600	400	600	100	8,900	4,700
1989	30,600	3.6	3,200	13,800	500	500	100	8,100	4,400
1990	29,800	3.4	3,000	12,700	500	600	100	8,400	4,500
1989-90 Change	**-3%**	**-6%**	**-6%**	**-8%**	**0%**	**+20%**	**0%**	**+4%**	**+2%**

Source: National Safety Council estimates based on reports from National Center for Health Statistics, Federal Highway Administration and state traffic authorities; 1988-1989 revised; 1990 preliminary.

[a]Totals may not equal sums of the types due to rounding. [b]Deaths per 100,000,000 vehicle miles.

[c]Not available. [d]Data are not comparable to previous years shown due to classification change in 1969.

[e]Procedures and benchmarks for estimating deaths for certain types of accidents were changed for the 1990 edition. Estimates for 1987 and later years are not comparable to earlier years.

Motor-Vehicle Deaths and Death Rates by Age, 1913-1990

Year	All Ages	Under 5 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65-74 Years	75 Years and Over[2]
	DEATHS							
1913	4,200	300	1,100	600	1,100	800	300	
1914	4,700	300	1,200	700	1,200	900	400	
1915	6,600	400	1,500	1,000	1,700	1,400	600	
1916	8,200	600	1,800	1,300	2,100	1,700	700	
1917	10,200	700	2,400	1,400	2,700	2,100	900	
1918	10,700	800	2,700	1,400	2,500	2,300	1,000	
1919	11,200	900	3,000	1,400	2,500	2,100	1,300	
1920	12,500	1,000	3,300	1,700	2,800	2,300	1,400	
1921	13,900	1,100	3,400	1,800	3,300	2,700	1,600	
1922	15,300	1,100	3,500	2,100	3,700	3,100	1,800	
1923	18,400	1,200	3,700	2,800	4,600	3,900	2,200	
1924	19,400	1,400	3,800	2,900	4,700	4,100	2,500	
1925	21,900	1,400	3,900	3,600	5,400	4,800	2,800	
1926	23,400	1,400	3,900	3,900	5,900	5,200	3,100	
1927	25,800	1,600	4,000	4,300	6,600	5,800	3,500	
1928	28,000	1,600	3,800	4,900	7,200	6,600	3,900	
1929	31,200	1,600	3,900	5,700	8,000	7,500	4,500	
1930	32,900	1,500	3,600	6,200	8,700	8,000	4,900	
1931	33,700	1,500	3,600	6,300	9,100	8,200	5,000	
1932	29,500	1,200	2,900	5,100	8,100	7,400	4,800	
1933	31,363	1,274	3,121	5,649	8,730	7,947	4,642	
1934	36,101	1,210	3,182	6,561	10,232	9,530	5,386	
1935	36,369	1,253	2,951	6,755	10,474	9,562	5,374	
1936	38,089	1,324	3,026	7,184	10,807	10,089	5,659	
1937	39,643	1,303	2,991	7,800	10,877	10,475	6,197	
1938	32,582	1,122	2,511	6,016	8,772	8,711	5,450	
1939	32,386	1,192	2,339	6,318	8,917	8,292	5,328	
1940	34,501	1,176	2,584	6,846	9,362	8,882	5,651	
1941	39,969	1,378	2,838	8,414	11,069	9,829	6,441	
1942	28,309	1,069	1,991	5,932	7,747	7,254	4,316	
1943	23,823	1,132	1,959	4,522	6,454	5,996	3,760	
1944	24,282	1,203	2,093	4,561	6,514	5,982	3,929	
1945	28,076	1,290	2,386	5,358	7,578	6,794	4,670	
1946	33,411	1,568	2,508	7,445	8,955	7,532	5,403	
1947	32,697	1,502	2,275	7,251	8,775	7,468	5,426	
1948	32,259	1,635	2,337	7,218	8,702	7,190	3,173	2,004
1949	31,701	1,667	2,158	6,772	8,892	7,073	3,116	2,023
1950	34,763	1,767	2,152	7,600	10,214	7,728	3,264	2,038
1951	36,996	1,875	2,300	7,713	11,253	8,276	3,444	2,135
1952	37,794	1,951	2,295	8,115	11,380	8,463	3,472	2,118
1953	37,956	2,019	2,368	8,169	11,302	8,318	3,508	2,271
1954	35,586	1,864	2,332	7,571	10,521	7,848	3,247	2,203
1955	38,426	1,875	2,406	8,656	11,448	8,372	3,455	2,214
1956	39,628	1,770	2,640	9,169	11,551	8,573	3,657	2,268
1957	38,702	1,785	2,604	8,667	11,230	8,545	3,560	2,311
1958	36,981	1,791	2,710	8,388	10,414	7,922	3,535	2,221
1959	37,910	1,842	2,719	8,969	10,358	8,263	3,487	2,272
1960	38,137	1,953	2,814	9,117	10,189	8,294	3,457	2,313
1961	38,091	1,891	2,802	9,088	10,212	8,267	3,467	2,364
1962	40,804	1,903	3,028	10,157	10,701	8,812	3,696	2,507
1963	43,564	1,991	3,063	11,123	11,356	9,506	3,786	2,739
1964	47,700	2,120	3,430	12,400	12,500	10,200	4,150	2,900
1965	49,163	2,059	3,526	13,395	12,595	10,509	4,077	3,002
1966	53,041	2,182	3,869	15,298	13,282	11,051	4,217	3,142
1967	52,924	2,067	3,845	15,646	12,987	10,902	4,285	3,192
1968	54,862	1,987	4,105	16,543	13,602	11,031	4,261	3,333
1969	55,791	2,077	4,045	17,443	13,868	11,012	4,210	3,136
1970	54,633	1,915	4,159	16,720	13,446	11,099	4,084	3,210
1971	54,381	1,885	4,256	17,103	13,307	10,471	4,108	3,251
1972	56,278	1,896	4,258	17,942	13,758	10,836	4,138	3,450
1973	55,511	1,998	4,124	18,032	14,013	10,216	3,892	3,236
1974	46,402	1,546	3,332	15,905	11,834	8,159	3,071	2,555
1975	45,853	1,576	3,286	15,672	11,969	7,663	3,047	2,640
1976	47,038	1,532	3,175	16,650	12,112	7,770	3,082	2,717

See source and footnotes on page 79.

Motor-Vehicle Deaths and Death Rates by Age, 1913-1990, Cont.

Year	All Ages	Under 5 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65-74 Years	75 Years and Over[a]
1977	49,510	1,472	3,142	18,092	13,031	8,000	3,060	2,713
1978	52,411	1,551	3,130	19,164	14,574	8,048	3,217	2,727
1979	53,524	1,461	2,952	19,369	15,658	8,162	3,171	2,751
1980	53,172	1,426	2,747	19,040	16,133	8,022	2,991	2,813
1981	51,385	1,256	2,575	17,363	16,447	7,818	3,090	2,836
1982	45,779	1,300	2,301	15,324	14,469	6,879	2,825	2,681
1983	44,452	1,233	2,241	14,289	14,323	6,690	2,827	2,849
1984	46,263	1,138	2,263	14,738	15,036	6,954	3,020	3,114
1985	45,901	1,195	2,319	14,277	15,034	6,885	3,014	3,177
1986	47,865	1,188	2,350	15,227	15,844	6,799	3,096	3,361
1987	48,290	1,190	2,397	14,447	16,405	7,021	3,277	3,553
1988	49,078	1,220	2,423	14,406	16,580	7,245	3,429	3,775
1989	47,100	1,300	2,200	12,500	16,200	7,500	3,500	3,900
1990	46,300	1,100	2,000	12,300	16,000	7,400	3,500	4,000
				Changes in Deaths				
1980 to 1990	**-13%**	**-23%**	**-27%**	**-35%**	**-1%**	**-8%**	**+17%**	**+42%**
1989 to 1990	**- 2%**	**-15%**	**- 9%**	**- 2%**	**-1%**	**-1%**	**0%**	**+ 3%**
				DEATH RATES[b]				
1913	4.4	2.3	5.5	3.1	3.8	5.3	8.5	
1914	4.8	2.5	5.7	3.5	4.1	6.2	9.3	
1915	6.6	3.5	7.3	5.0	5.6	8.8	13.5	
1916	8.1	4.7	8.6	6.0	7.0	10.7	15.8	
1917	10.0	5.6	10.6	7.4	8.6	12.6	18.6	
1918	10.3	6.9	12.3	7.7	8.3	13.7	21.2	
1919	10.7	7.5	13.9	7.5	8.1	12.4	24.1	
1920	11.7	8.6	14.6	8.7	8.8	13.5	27.0	
1921	12.9	9.0	14.5	9.2	10.2	15.4	31.0	
1922	13.9	9.2	15.0	10.8	11.1	17.2	34.9	
1923	16.5	9.7	15.6	13.4	13.6	21.0	40.5	
1924	17.1	11.1	16.1	14.3	13.7	21.8	43.7	
1925	19.1	11.0	15.6	17.2	15.8	25.0	48.9	
1926	20.1	11.0	15.9	18.6	17.1	26.3	51.4	
1927	21.8	12.8	16.0	20.0	18.8	28.9	56.9	
1928	23.4	12.7	15.5	21.9	20.2	32.4	62.2	
1929	25.7	13.4	15.6	25.6	22.3	35.6	68.6	
1930	26.7	13.0	14.7	27.4	23.9	37.0	72.5	
1931	27.2	13.3	14.5	27.9	24.8	37.4	70.6	
1932	23.6	11.3	12.0	22.6	22.0	32.9	63.6	
1933	25.0	12.0	12.7	24.8	23.4	34.7	63.1	
1934	28.6	11.7	13.0	28.6	27.2	40.7	71.0	
1935	28.6	12.3	12.2	29.2	27.6	39.9	68.9	
1936	29.7	13.2	12.6	30.8	28.2	41.3	70.5	
1937	30.8	13.0	12.7	33.2	28.2	42.0	75.1	
1938	25.1	11.0	10.8	25.4	22.5	34.3	64.1	
1939	24.7	11.2	10.4	26.5	22.6	32.2	60.2	
1940	26.1	11.1	11.5	28.7	23.5	33.9	62.1	
1941	30.0	12.7	12.6	35.7	27.5	37.0	68.6	
1942	21.1	9.5	8.8	25.8	19.2	26.9	44.5	
1943	17.8	9.4	8.6	20.6	16.1	21.9	37.6	
1944	18.3	9.6	9.1	22.5	16.6	21.6	38.2	
1945	21.2	10.0	10.3	27.8	19.7	24.2	44.1	
1946	23.9	11.9	10.8	34.4	21.1	26.4	49.6	
1947	22.8	10.5	9.7	32.8	20.3	25.7	48.2	
1948	22.1	11.0	9.8	32.5	19.8	24.3	39.6	55.4
1949	21.3	10.7	9.0	30.7	19.9	23.4	37.8	53.9
1950	23.0	10.8	8.8	34.5	22.5	25.1	38.8	52.4
1951	24.1	10.9	9.2	36.0	24.7	26.5	39.5	53.0

See source and footnotes on page 79.

Motor-Vehicle Deaths and Death Rates by Age, 1913-1990, Cont.

Year	All Ages	Under 5 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65-74 Years	75 Years and Over[a]
1952	24.3	11.3	8.7	38.6	24.7	26.7	38.5	50.8
1953	24.0	11.5	8.5	39.1	24.5	25.8	37.7	52.6
1954	22.1	10.4	8.1	36.2	22.6	24.0	33.9	49.0
1955	23.4	10.2	8.0	40.9	24.5	25.2	35.1	47.1
1956	23.7	9.4	8.4	42.9	24.6	25.3	36.2	46.4
1957	22.7	9.2	8.0	39.7	23.9	24.8	34.4	45.5
1958	21.3	9.1	8.1	37.0	22.3	22.6	33.5	42.3
1959	21.5	9.1	7.9	38.2	22.2	23.2	32.3	41.8
1960	21.2	9.6	7.9	37.7	21.7	22.9	31.3	41.1
1961	20.8	9.2	7.6	36.5	21.8	22.5	30.7	40.5
1962	22.0	9.3	8.1	38.4	22.9	23.7	32.2	41.7
1963	23.1	9.8	8.0	40.0	24.3	25.2	32.6	44.3
1964	25.0	10.5	8.8	42.6	26.8	26.6	35.5	45.2
1965	25.4	10.4	8.9	44.2	27.0	27.0	34.6	45.4
1966	27.1	11.4	9.7	48.7	28.5	27.9	35.4	46.2
1967	26.8	11.2	9.5	48.4	27.8	27.1	35.6	45.4
1968	27.5	11.1	10.1	49.8	28.8	27.0	35.1	46.0
1969	27.7	12.0	9.9	50.7	29.1	26.6	34.3	42.0
1970	26.8	11.2	10.2	46.7	27.9	26.4	32.7	42.2
1971	26.3	10.9	10.5	45.7	27.4	24.7	32.4	41.3
1972	26.9	11.1	10.7	47.1	27.4	25.3	32.0	42.6
1973	26.3	11.9	10.5	46.3	27.2	23.6	29.4	39.1
1974	21.8	9.4	8.6	40.0	22.4	18.8	22.6	30.1
1975	21.3	9.8	8.6	38.7	22.1	17.5	21.9	30.1
1976	21.6	9.8	8.4	40.3	21.8	17.6	21.6	30.1
1977	22.5	9.5	8.5	43.3	22.7	18.1	20.9	29.3
1978	23.6	9.9	8.6	45.4	24.6	18.2	21.5	28.7
1979	23.8	9.1	8.3	45.6	25.6	18.4	20.7	28.1
1980	23.4	8.7	7.9	44.8	25.5	18.0	19.1	28.0
1981	22.4	7.4	7.5	41.2	25.2	17.5	19.4	27.5
1982	19.7	7.5	6.7	36.9	21.4	15.4	17.4	25.2
1983	19.0	7.0	6.6	35.1	20.5	15.0	17.1	26.1
1984	19.6	6.4	6.7	36.7	20.9	15.5	18.0	27.7
1985	19.2	6.6	6.8	36.1	20.4	15.3	17.7	27.6
1986	19.9	6.5	6.9	39.0	20.9	15.1	17.9	28.4
1987	19.8	6.5	7.0	37.8	21.1	15.5	18.5	29.2
1988	20.1	6.6	7.0	38.5	21.0	15.8	19.2	30.3
1989	19.1	6.9	6.3	34.2	20.2	16.1	19.2	30.5
1990	18.6	5.8	5.7	33.5	19.8	15.8	19.2	31.1
				Changes in Rates				
1980 to 1990	**-21%**	**-33%**	**-28%**	**-25%**	**-22%**	**-12%**	**+1%**	**+11%**
1989 to 1990	**- 3%**	**-16%**	**-10%**	**- 2%**	**- 2%**	**- 2%**	**0%**	**+ 2%**

Source: 1913 to 1932 calculated from National Center for Health Statistics data for registration states; 1933 to 1963, 1965 to 1988 are NCHS totals. All other figures are National Safety Council estimates: 1990 preliminary, 1989 revised. See page 21 for comparability.

[a]Includes "age unknown." In 1988 these deaths numbered 45.

[b]Death rates are deaths per 100,000 population in each age group.

Emergency Vehicles Involved in Accidents

About 22,000 police cars were involved in police-reported motor-vehicle traffic accidents in 1989 according to data from the General Estimates System of the National Highway Traffic Safety Administration (NHTSA). An estimated 3,200 fire trucks and 3,500 ambulances were also involved in 1989 accidents. Comparable figures for 1988 involvements were 20,000 police cars, 2,500 fire trucks and 4,500 ambulances.

Also in 1989, 100 police cars, 12 fire trucks, and 28 ambulances were involved in fatal traffic accidents according to NHTSA's Fatal Accident Reporting System. Comparable figures for 1988 were 98 police cars, 20 fire trucks, and 24 ambulances.

Motor-Vehicle Traffic Deaths, Cities, 1989-1990

City		1990	1989	1990 Rates Pop.[a]	1990 Rates Reg.[b]
All Cities		**7,540**	**7,623**	**10.7**	**1.1**
(439 Reporting Cities Over 25,000 Population)					
Group I—Over 1,000,000 Population (7 Cities)					
All Cities		**2,093**	**2,002**	**11.1**	**2.0**
Los Angeles,	Cal.	414	364	11.9	2.3
Chicago,	Ill.	276	294	9.9	1.7
Detroit,	Mich.	133	126	12.9	1.8
New York,	N. Y.	656	615	9.0	2.2
Philadelphia,	Pa.	178	180	11.2	2.5
Dallas,	Tex.	172	176	17.1	1.8
Houston,	"	264	247	16.2	1.5
Group II—750,000-1,000,000 Population (4 Cities)					
All Cities		**364**	**406**	**10.3**	**1.4**
Phoenix,	Ariz.	135	140	13.7	1.6
San Jose,	Cal.	49	57	6.3	0.6
Honolulu,	Haw.	89	79	10.6	2.6
San Antonio,	Tex.	91	130	9.7	1.5
Group III—500,000-750,000 Population (11 Cities)					
All Cities		**788**	**858**	**10.8**	**1.6**
San Francisco,	Cal.	140	163	15.7	2.2
Washington,	D.C.	45	71	6.0	0.8
Jacksonville,	Fla.	55	64	7.7	1.0
Indianapolis,	Ind.	75	62	12.0	2.8
Boston,	Mass.	137	124	22.5	2.9
Cleveland,	Ohio	79	88	10.9	2.2
Columbus,	"	34	42	4.7	0.6
Nashville,	Tenn.	49	75	8.8	1.8
El Paso,	Tex.	46	55	8.0	1.2
Seattle,	Wash.	52	45	10.2	1.4
Milwaukee,	Wis.	76	69	12.8	2.2
Group IV—350,000-500,000 Population (19 Cities)					
All Cities		**996**	**1,020**	**12.8**	**1.0**
Tucson,	Ariz.	46	42	11.3	0.9
Long Beach,	Cal.	51	52	11.9	1.3
Oakland,	"	40	49	10.7	1.3
Sacramento,	"	44	41	11.9	0.8
Denver,	Colo.	47	49	10.1	6.2
Miami,	Fla.	78	73	21.8	0.7
Atlanta,	Ga.	78	88	19.8	1.2
New Orleans,	La.	72	48	14.5	2.2
Minneapolis,	Minn.	27	22	7.3	0.3
Kansas City,	Mo.	80	81	18.4	1.8
St. Louis,	"	50	51	12.6	0.6
Albuquerque,	N. M.	53	49	13.8	1.0
Charlotte,	N. C.	44	33	11.1	0.9
Cincinnati,	Ohio	20	35	5.5	0.3
Oklahoma City,	Okla.	73	82	16.4	1.4
Tulsa,	"	48	43	13.1	1.4
Austin,	Tex.	42	68	9.0	0.8
Fort Worth,	"	74	83	16.5	1.3
Virginia Beach,	Va.	29	31	7.4	0.8
Group V—200,000-350,000 Population (24 Cities)					
All Cities		**859**	**825**	**13.2**	**1.7**
Birmingham,	Ala.	47	44	16.8	2.1
Anchorage,	Alas.	26	23	12.5	1.3
Mesa,	Ariz.	29	21	14.3	2.1
Anaheim,	Cal.	42	47	12.7	1.6
Riverside,	"	24	34	11.6	1.2
Santa Ana,	"	51	45	15.0	2.0
Aurora,	Colo.	44	40	13.0	2.0
Colorado Sprgs.,	"	36	34	13.1	1.5
St. Petersburg,	Fla.	35	25	16.9	2.0
Tampa,	"	73	82	21.0	2.3
Wichita,	Kans.	41	29	17.7	1.9
Lexington,	Ky.	53	63	20.1	2.2
Baton Rouge,	La.	26	31	9.7	1.0
St. Paul,	Minn.	31	29	10.0	1.2
Omaha,	Neb.	18	16	8.9	1.0
Buffalo,	N. Y.	15	15	5.7	0.9
Rochester,	"	33	36	11.0	1.9
Raleigh,	N. C.	49	50	16.6	2.6
Akron,	Ohio	12	18	5.0	0.7
Toledo,	"	22	20	9.2	1.0
Arlington,	Tex.	38	30	11.5	1.3
Corpus Christi,	"	68	45	21.3	3.7
Norfolk,	Va.	33	24	15.4	1.9
Richmond,	"	13	24	4.6	0.9
Group VI—100,000-200,000 Population (75 Cities)					
All Cities		**1,045**	**1,085**	**9.7**	**0.8**
Mobile,	Ala.	19	27	9.7	0.7
Montgomery,	"	37	23	19.8	2.0
Berkeley,	Cal.	4	5	3.9	0.3
Chula Vista,	"	16	6	11.8	1.3
Escondido,	"	13	10	12.0	1.0
Fremont,	"	10	9	5.8	0.5
Fullerton,	"	5	13	4.4	0.4
Garden Grove,	"	11	12	7.7	0.7
Glendale,	"	9	9	5.0	0.5
Hntngtn. Bch.,	"	9	12	5.0	0.4
Modesto,	"	18	8	10.9	1.0
Oceanside,	"	18	7	14.0	1.5
Oxnard,	"	10	10	7.0	0.8
San Bernadino,	"	35	17	21.3	2.4
Torrance,	"	16	6	12.0	0.8
Bridgeport,	Conn.	14	11	9.9	1.0
Hartford,	"	19	15	13.6	0.7
New Haven,	"	16	16	12.3	0.7
Stamford,	"	9	9	8.3	0.8
Waterbury,	"	16	15	14.7	1.4
Fort Lauderdale,	Fla.	31	35	20.7	0.7
Hialeah,	"	31	36	16.5	1.7
Orlando,	"	21	24	12.8	0.4
Macon,	Ga.	16	25	15.0	1.2
Savannah,	"	14	17	10.2	0.8
Peoria,	Ill.	4	6	3.5	0.3
Rockford,	"	21	18	15.1	1.1
Springfield,	"	11	10	10.5	0.8
Evansville,	Ind.	9	10	7.1	0.6
Fort Wayne,	"	16	19	9.2	0.7
South Bend,	"	13	15	12.3	1.1
Cedar Rapids,	Ia.	6	10	5.5	0.5
Kansas City,	Kans.	31	22	20.7	2.5
Overland Park,	"	3	5	2.7	0.6
Topeka,	"	3	5	2.5	0.2

See source and footnotes on page 83.

Motor-Vehicle Traffic Deaths, Cities, 1989-1990, Cont.

City		1990	1989	1990 Rates Pop.[a]	1990 Rates Reg.[b]
Shreveport,	La.	34	18	17.1	1.7
Ann Arbor,	Mich.	1	5	0.9	0.1
Flint,	"	13	21	9.2	0.8
Grand Rapids,	"	21	19	11.1	0.7
Lansing,	"	6	10	4.7	0.4
Livonia,	"	6	12	5.9	0.6
Sterling Hts.,	"	4	6	3.4	0.8
Warren,	"	14	17	9.7	1.1
Jackson,	Miss.	27	32	13.7	1.2
Springfield,	Mo.	5	16	3.6	0.3
Lincoln,	Neb.	8	11	4.2	0.5
Reno,	Nev.	9	12	6.7	0.5
Albany,	N. Y.	6	8	5.9	0.4
Syracuse,	"	7	11	4.3	0.4
Yonkers,	"	10	13	5.3	0.6
Durham,	N. C.	16	10	11.7	0.9
Greensboro,	"	10	24	5.4	0.4
Dayton,	Ohio	44	35	24.2	1.0
Salem,	Ore.	10	14	9.3	0.5
Allentown,	Pa.	5	13	4.7	0.4
Erie,	"	18	11	16.6	1.4
Providence,	R. I.	9	8	5.6	0.3
Knoxville,	Tenn.	28	24	17.0	0.9
Abilene,	Tex.	10	19	9.4	1.0
Beaumont,	"	6	14	5.2	0.6
Garland,	"	12	7	6.6	0.7
Lubbock,	"	17	23	9.1	1.0
Mesquite,	"	7	12	6.9	0.7
Pasadena,	"	15	14	12.6	1.7
Waco,	"	25	11	24.1	2.2
Salt Lake City,	Utah	24	15	15.0	0.5
Alexandria,	Va.	2	3	1.8	0.1
Arlington,	"	7	13	4.1	0.4
Chesapeake,	"	15	18	9.9	1.1
Hampton,	"	6	9	4.5	0.5
Newport News,	"	14	7	8.2	0.9
Portsmouth,	"	6	10	5.8	0.8
Spokane,	Wash.	7	9	4.0	0.3
Tacoma,	"	21	41	11.9	0.6
Madison,	Wis.	6	13	3.1	0.3
Group VII—50,000-100,000 Population (151 Cities)					
All Cities		**926**	**982**	**8.7**	**0.7**
Dothan,	Ala.	8	7	14.9	1.2
Tuscaloosa,	"	13	7	16.7	1.8
Yuma,	Ariz.	7	3	12.8	0.9
Fort Smith,	Ark.	3	3	4.1	0.4
N. Little Rock,	"	1	4	1.6	0.1
Pine Bluff,	"	6	13	10.5	1.0
Burbank,	Cal.	7	8	7.5	0.7
Carlsbad,	"	4	1	6.3	0.5
Chino,	"	4	9	6.7	0.5
Compton,	"	9	8	9.9	1.2
Daly City,	"	0	3	0.0	0.0
El Cajon,	"	11	7	12.4	0.8
La Habra,	"	6	4	11.7	1.0
La Mesa,	"	3	1	5.7	0.4
Livermore,	"	0	3	0.0	0.0
National City,	"	3	16	5.5	0.8
Palo Alto,	Cal.	6	5	10.7	0.6
Pico Rivera,	"	10	5	16.7	1.9
Redding,	"	4	6	6.0	0.5
Redondo Beach,	"	6	5	10.0	0.5
Richmond,	"	4	9	4.6	0.3
Santa Clara,	"	4	8	4.3	0.4
South Gate,	"	6	6	7.0	1.0
Vacaville,	"	2	2	2.8	0.3
Westminster,	"	9	13	11.5	1.1
Whittier,	"	10	1	12.9	0.6
Longmont,	Colo.	2	0	3.9	0.3
Pueblo,	"	12	14	12.2	1.0
Daytona Beach,	Fla.	19	12	30.7	1.5
Gainesville,	"	6	3	7.1	0.5
Lakeland,	"	8	19	11.3	0.6
Miami Beach,	"	17	24	18.4	2.1
Pembroke Pines,	"	6	1	9.2	2.3
Pensacola,	"	5	10	8.6	0.3
Plantation,	"	10	7	15.0	2.6
Pompano Beach,	"	12	8	16.6	0.6
West Palm Beach,	"	11	14	16.3	0.5
Aurora,	Ill.	9	9	9.0	1.0
Champaign,	"	2	3	3.1	0.4
Decatur,	"	1	10	1.2	0.1
Elgin,	"	7	6	9.1	1.0
Evanston,	"	4	5	5.5	0.6
Joliet,	"	6	5	7.8	0.6
Skokie,	"	1	5	1.7	0.2
Waukegan,	"	14	2	20.2	2.1
Wheaton,	"	1	0	1.9	0.1
Anderson,	Ind.	5	5	8.4	0.7
Muncie,	"	6	10	8.5	0.8
Dubuque,	Ia.	2	1	3.5	0.3
Sioux City,	"	8	13	9.9	1.1
Waterloo,	"	10	4	15.0	1.4
Owensboro,	Ky.	4	2	7.5	0.6
Lafayette,	La.	16	16	16.9	1.4
Lake Charles,	"	8	12	11.3	0.8
Portland,	Me.	6	4	9.3	0.6
Brookline,	Mass.	3	1	5.5	0.7
Framingham,	"	2	6	3.1	0.3
Lawrence,	"	4	4	5.7	0.8
Newton,	"	4	0	4.8	1.2
Waltham,	"	3	2	5.2	0.5
Battle Creek,	Mich.	6	8	11.2	0.8
Dearborn,	"	8	9	9.0	0.7
Dearborn Hts.,	"	5	7	8.2	1.0
East Lansing,	"	1	0	2.0	0.3
Kalamazoo	"	2	3	2.5	0.1
Pontiac,	"	9	12	12.6	1.1
Roseville,	"	5	4	9.7	1.1
Royal Oak,	"	3	4	4.6	0.3
Saginaw,	"	10	3	14.4	0.9
Southfield,	"	7	11	9.2	0.8
St. Clair Shrs.,	"	6	0	8.8	1.0
Taylor,	"	13	12	18.4	2.4
Troy,	"	5	10	6.9	0.6
Westland,	"	7	10	8.3	0.6
Wyoming,	"	2	5	3.1	0.5

See source and footnotes on page 83.

Motor-Vehicle Traffic Deaths, Cities, 1989-1990, Cont.

City	1990	1989	1990 Rates Pop.[a]	1990 Rates Reg.[b]
Brooklyn Center, Minn.	0	0	0.0	0.0
Coon Rapids, "	4	3	7.7	1.9
Duluth, "	4	6	4.7	0.4
Rochester, "	2	0	2.8	0.2
Columbia, Mo.	6	6	8.7	0.8
Florissant, "	0	2	0.0	0.0
St. Charles, "	6	3	11.0	0.6
St. Joseph, "	5	4	7.0	0.8
Billings, Mont.	7	3	8.6	0.7
Great Falls, "	1	1	1.8	0.1
Manchester, N. H.	7	21	7.0	0.5
Nashua, "	4	7	5.0	0.5
Bayonne, N. J.	5	2	8.1	1.3
Camden, "	19	8	21.7	1.8
Clifton, "	10	9	13.9	1.5
Dover Twp., "	10	21	13.1	2.2
Middletown Twp., "	5	3	7.3	1.8
Trenton, "	7	7	7.9	0.3
Vineland, "	14	13	25.5	3.1
Mt. Vernon, N. Y.	2	3	3.0	0.4
New Rochelle, "	3	5	4.5	0.4
Schenectady, "	2	4	3.0	0.1
Utica, "	5	3	7.3	0.9
Fayetteville, N. C.	5	10	6.6	0.3
Fargo, N. D.	4	3	5.4	0.5
Canton, Ohio	8	6	9.5	0.5
Elyria, "	3	2	5.3	0.4
Hamilton, "	4	7	6.5	0.3
Lakewood, "	1	1	1.7	0.2
Mansfield, "	4	4	7.9	0.5
Parma, "	9	6	10.2	1.1
Springfield, "	9	6	12.8	1.0
Youngstown, "	14	15	14.6	0.9
Norman, Okla.	4	9	5.0	0.6
Bethlehem, Pa.	8	11	11.2	0.9
Harrisburg, "	6	12	11.5	0.4
Lancaster, "	1	1	1.8	0.1
Lwr. Merion Twp., "	4	0	6.9	1.0
Reading, "	4	9	5.1	0.3
Cranston, R. I.	14	7	18.4	3.6
Warwick, "	10	10	11.7	1.1
Charleston, S. C.	5	9	6.2	0.3
Rapid City, S. D.	1	7	1.8	0.1
Sioux Falls, "	5	3	5.0	0.4
Brownsville, Tex.	14	11	14.1	2.0
Bryan, "	7	4	12.7	1.4
Denton, "	9	10	13.6	1.5
Galveston, "	24	20	40.7	5.5
Grand Prairie, "	17	13	17.1	1.9
Killeen, "	4	1	6.3	0.7
Midland, "	6	4	6.7	0.6
Odessa, "	4	8	4.5	0.4
Port Arthur, "	17	8	29.0	4.0
San Angelo, "	5	6	5.9	0.6
Tyler, "	7	17	9.3	0.7
Victoria, "	7	7	12.7	1.2
Wichita Falls, "	5	15	5.2	0.6
Orem, Utah	2	6	3.0	0.4
Provo, "	5	4	5.8	1.0
Danville, Va.	8	3	15.1	1.3
Lynchburg, "	4	9	6.1	0.5
Roanoke, "	10	8	10.4	0.6
Bellevue, Wash.	4	3	4.6	0.3
Everett, "	11	5	15.7	0.8
Yakima, "	1	5	1.8	0.1
Charleston, W.Va.	6	14	10.5	0.5
Appleton, Wis.	3	5	4.6	0.4
Eau Claire, "	1	1	1.8	0.2
Green Bay, "	8	5	8.3	0.6
Janesville, "	1	2	1.9	0.2
Kenosha, "	3	10	3.7	0.4
La Crosse, "	4	2	7.8	0.8
Oshkosh, "	1	2	1.8	0.2
Racine, "	6	6	7.1	0.6
Waukesha, "	0	0	0.0	0.0
West Allis, "	2	2	3.2	0.4
Group VIII—25,000-50,000 Population (148 Cities)				
All Cities	**469**	**445**	**9.2**	**1.2**
Florence, Ala.	3	2	8.2	0.5
Gadsden, "	16	8	37.6	2.2
Phenix City, "	4	1	15.8	1.1
Covina, Cal.	2	0	4.6	0.3
Fort Myers, Fla.	12	15	26.5	0.9
Fort Pierce, "	5	11	13.6	0.5
Hallandale, "	3	0	10.0	1.2
Lake Worth, "	5	8	17.5	0.6
North Miami, "	4	6	8.1	1.5
Ocala, "	9	7	21.4	0.9
Pinellas Park, "	4	7	9.2	1.0
Hilo, Haw.	48	40	181.8	9.8
Idaho Falls, Ida.	1	1	2.3	0.1
Alton, Ill.	5	7	15.2	1.7
Berwyn, "	1	4	2.2	0.2
Calumet City, "	3	1	7.9	1.0
De Kalb, "	2	3	5.7	0.8
Elk Grove Vlge., "	1	4	3.0	0.5
Elmhurst, "	3	2	7.1	0.7
Galesburg, "	3	7	9.0	1.0
Glenview, "	2	0	5.4	0.4
Granite City, "	3	5	9.1	0.7
Moline, "	1	9	2.3	0.2
North Chicago, "	5	5	14.7	3.7
Quincy, "	3	3	7.6	0.7
Wilmette, "	1	1	3.7	0.4
Highland, Ind.	0	2	0.0	0.0
Marion, "	8	3	24.5	2.1
Michigan City, "	3	4	8.9	0.8
Mishawaka, "	3	11	7.0	0.7
Ames, Ia.	4	0	8.5	1.0
Bettendorf, "	0	1	0.0	0.0
Burlington, "	1	0	3.7	0.3
Mason City, "	1	2	3.4	0.3
Hutchinson, Kans.	3	2	7.6	0.6
Manhattan, "	1	3	2.7	0.3
Prairie Vlge., "	0	0	0.0	0.0
Salina, "	2	2	4.7	0.4
Shawnee, "	3	4	8.1	0.3
Bangor, Me.	0	1	0.0	0.0

See source and footnotes on page 83.

Motor-Vehicle Traffic Deaths, Cities, 1989-1990, Cont.

City	1990	1989	1990 Rates	
			Pop.[a]	Reg.[b]
Annapolis, Md.	3	2	9.0	0.4
Hagerstown, "	1	1	2.8	0.2
Arlington, Mass.	3	1	6.7	0.7
Belmont, "	1	2	4.0	0.4
Pittsfield, "	4	6	8.2	0.9
Watertown, "	1	4	3.0	0.3
W. Springfield, "	2	0	5.2	0.7
Allen Park, Mich.	1	4	3.2	0.4
Bay City, "	3	5	7.7	0.5
East Detroit, "	3	1	8.5	1.0
Ferndale, "	1	2	4.0	0.4
Garden City, "	4	0	12.6	1.5
Highland Park, "	3	3	14.9	1.2
Inkster, "	4	3	13.0	1.9
Jackson, "	5	5	13.4	0.6
Kentwood, "	5	6	13.2	2.5
Lincoln Park, "	2	4	4.8	0.6
Madison Hts., "	3	0	9.3	1.3
Midland, "	5	0	13.1	1.3
Muskegon, "	4	6	9.9	0.4
Oak Park, "	0	0	0.0	0.0
Portage, "	4	5	9.8	2.4
Port Huron, "	1	2	3.0	0.2
Southgate, "	2	3	6.5	0.9
Wyandotte, "	3	0	9.7	0.5
Ypsilanti, "	3	1	12.1	0.4
Moorhead, Minn.	3	0	9.3	1.3
St. Louis Park, "	6	2	13.7	2.1
Winona, "	0	1	0.0	0.0
Cape Girardeau, Mo.	3	2	8.7	0.9
Gladstone, "	0	0	0.0	0.0
Jefferson City, "	5	3	14.1	0.9
Kirkwood, "	0	0	0.0	0.0
Raytown, "	2	0	6.5	1.1
University City, "	3	1	7.5	0.9
Grand Island, Neb.	1	2	2.5	0.2
N. Las Vegas, Nev.	6	6	12.6	1.9
Concord, N. H.	0	3	0.0	0.0
Kearny, N. J.	10	4	28.7	2.3
Neptune, "	2	0	7.1	0.7
Piscataway Twp., "	1	2	2.7	0.2
Elmira, N. Y.	1	2	3.0	0.3
Jamestown, "	1	2	2.9	0.3
Rome, "	3	1	6.8	0.7
Watertown, "	1	1	3.4	0.3
Burlington, N. C.	4	2	10.1	0.6
Goldsboro, "	5	4	12.3	0.9
Bismarck, N. D.	3	3	6.1	0.5
Barberton, Ohio	2	2	7.2	0.6
Bowling Green, "	1	0	3.5	0.5
Fairborn, "	1	0	3.2	0.3
Garfield Hts., "	2	1	6.3	0.8
Kent, "	0	0	0.0	0.0
Lima, "	4	7	8.8	0.5
Middletown, "	3	3	6.5	0.5
North Olmsted, "	2	2	5.8	0.7
Portsmouth, "	0	0	0.0	0.0
Sandusky, "	2	4	6.7	0.5
Shaker Heights, Ohio	1	0	3.2	0.4
South Euclid, "	1	1	4.2	0.5
Steubenville, "	3	2	13.6	1.1
Stow, "	0	2	0.0	0.0
Zanesville, "	1	1	3.7	0.2
Bartlesville, Okla.	2	2	5.8	0.5
Enid, "	0	1	0.0	0.0
Muskogee, "	0	0	0.0	0.0
Stillwater, "	2	2	5.4	0.7
Medford, Ore.	2	3	4.2	0.2
Cheltenham Twp., Pa.	6	2	17.2	4.3
Mt. Lebanon, "	1	0	3.0	0.5
Wilkes-Barre, "	2	0	4.2	0.3
Woonsocket, R. I.	3	2	6.8	0.7
Anderson, S. C.	5	3	19.1	0.7
Florence, "	4	0	13.4	0.7
Greenwood, "	4	2	19.2	1.0
Rock Hill, "	7	6	16.8	1.1
Spartanburg, "	4	4	9.2	0.4
Sumter, "	3	2	7.2	0.5
Aberdeen, S. D.	1	0	4.0	0.4
Jackson, Tenn.	7	3	14.3	1.1
Oak Ridge, "	5	4	18.3	1.6
Big Spring, Tex.	4	2	17.3	1.6
Farmers Branch, "	2	3	8.2	0.8
Haltom City, "	3	1	9.1	1.4
Harlingen, "	4	9	8.2	1.0
Hurst, "	4	3	11.9	1.2
Kingsville, "	3	4	11.9	1.5
Orange, "	7	15	36.1	1.9
Sherman, "	2	2	6.3	0.6
Temple, "	2	1	4.3	0.4
Texarkana, "	5	1	15.8	1.1
Bountiful, Utah	0	4	0.0	0.0
Charlottesville, Va.	6	2	14.9	0.7
Petersburg, "	8	8	20.8	1.7
Bremerton, Wash.	5	1	13.1	0.7
Edmonds, "	0	1	0.0	0.0
Kennewick, "	1	2	2.4	0.2
Longview, "	1	4	3.2	0.2
Olympia, "	1	0	2.9	0.1
Renton, "	5	1	12.0	0.5
Richland, "	2	3	6.2	0.5
Vancouver, "	3	7	6.5	0.2
Wheeling, W.Va.	0	0	0.0	0.0
Fond du Lac, Wis.	2	2	5.3	0.5
Manitowoc, "	1	2	3.1	0.3
Sheboygan, "	2	1	4.0	0.4
Wausau, "	4	2	10.8	0.9
Wauwatosa, "	2	4	4.0	0.4
Canadian Cities (4 Cities)				
All Cities	**68**	**85**	**8.8**	**1.5**
Lethbridge, Alta.	0	2	19.1	4.1
Medicine Hat, "	4	3	12.0	2.6
Vancouver, B. C.	40	39	9.5	1.6
Hamilton, Ont.	30	22	6.4	1.1

Source: City police departments; state traffic authorities. Only motor-vehicle deaths resulting from accidents occurring within the city are included. Registration figures supplied by R. L. Polk & Co.

[a]Population death rates are deaths per 100,000 population.

[b]Registration death rates are deaths per 10,000 registered motor vehicles.

Fleet Accident Rates by Division, 1988-1990
Reporters in the National Fleet Safety Contests

Fleet Divisions and Groups	1990			Accidents Per 1,000,000 Vehicle Miles	
	Fleets	Vehicles	Veh. Miles (thousands)	1990	1988-1990
Government Division	**4**	**509**	**7,452**	**9.93**	**6.97**
Intercity	1	82	3,051	2.62	5.03
City	2	131	1,617	30.92	20.00
State Highway Departments	1	296	2,784	5.75	4.45
Meat Packing Truck Division	**1**	**34**	**3,786**	**5.55**	**5.42**
Petroleum Division	**12**	**571**	**17,121**	**1.93**	**2.34**
Intercity Marketing	4	61	6,916	2.46	2.71
Refining	1	45	547	1.83	6.21
Production	6	453	9,476	1.58	1.94
Pipeline	1	12	183	0.00	2.20
Public Utility Division	**82**	**58,221**	**690,330**	**4.91**	**5.43**
Electric Utility	66	53,112	631,109	4.82	5.33
Water & Communications Utility	16	5,109	59,221	5.81	6.43
Small Fleet Division	**4**	**32**	**2,383**	**1.68**	**2.16**
Commercial Intercity	3	24	2,316	1.73	2.29
Commercial City	1	8	67	0.00	0.00
Dairy Industry Division	**50**	**967**	**53,391**	**2.98**	**3.15**
Retail Truck	1	34	866	1.15	1.52
Wholesale Truck	4	180	4,748	4.84	4.86
Over-The-Road Truck	27	629	40,557	2.79	3.13
Small Fleet	18	124	7,220	3.05	2.14
Passenger Car Division[a]	**23**	**6,326**	**133,097**	**3.59**	**3.85**
Eastern Region	11	4,051	91,862	4.08	4.26
Western Region	8	2,245	40,485	2.52	2.85
Small Fleet	4	30	750	1.33	2.46
Police Division	**13**	**1,915**	**30,803**	**24.15**	**16.00**
Municipal Police	6	1,171	18,976	36.36	36.34
State Police	2	631	11,668	4.03	5.88
Motorcycles	2	92	48	124.92	55.35
Small Fleet	3	21	111	9.02	32.02
School Bus Division	**19**	**770**	**11,080**	**7.94**	**7.89**
Transit Division	**28**	**4,647**	**176,698**	**28.83**	**29.04**
Truck Division[b]	**82**	**29,943**	**646,760**	**16.43**	**15.79**
Intercity	47	2,038	151,203	2.72	3.80
City	24	27,828	489,404	20.82	21.60
Small Fleet	11	77	6,152	3.74	3.05
Postal Service Division	**236**	**25,122**	**125,096**	**17.80**	**17.57**
Intercity	4	293	5,267	21.07	19.28
City	42	6,401	41,969	20.28	19.92
Light Delivery Vehicles	165	16,479	69,425	16.95	16.44
Passenger Cars-City	25	1,949	8,434	10.43	13.03
Automobile Transporters Division	**22**	**10,699**	**613,914**	**4.41**	**4.63**
Truckaway	17	10,033	556,263	4.51	4.73
Driveaway	5	666	57,651	3.38	3.66
Gas Industry Division	**59**	**49,062**	**347,657**	**6.52**	**6.90**
Gas Utility	42	35,045	217,744	8.02	8.29
Gas Transmission System	17	14,017	129,912	4.00	4.30
Intercity Bus Division	**30**	**4,642**	**321,583**	**7.78**	**6.14**
Eastern Region	13	2,156	150,438	8.44	6.52
Western Region	7	2,168	158,620	7.11	5.65
Charter	6	119	6,630	3.62	3.17
Suburban Commuter	3	186	5,422	15.12	16.04
Airport Shuttle	1	13	473	0.00	0.00
Mail Contractors Division	**34**	**899**	**104,204**	**1.30**	**1.59**
Tractor-Trailer	17	698	92,440	1.28	1.57
Straight Truck	9	149	8,455	1.54	1.97
Small Fleet	8	52	3,309	1.21	1.22

Source: National Fleet Safety Contests. These reports include property damage as well as personal injury accidents, but exclude accidents in which the fleet vehicle was properly parked. See also *Fleet Accident Rates, 1991.*

[a] Includes cars used in the course of work by such persons as salesmen, supervisors, etc.

[b] Includes common carriers, private carriers and contract carriers.

PUBLIC ACCIDENTS, 1990

Between 1912 and 1990, accidental public deaths per 100,000 population were reduced 73 per cent from 30 to 8. In 1912, an estimated 28,000 to 30,000 persons died in public nonmotor-vehicle accidents. In 1990, with a population more than doubled, and recreational activity greatly increased, only 19,000 persons died in public accidents and 2,400,000 suffered disabling injuries. Public excludes deaths involving motor-vehicles and persons at work or at home.

Deaths	**19,000**
Disabling injuries	**2,400,000**
Death rate per 100,000 population	**7.6**
Cost (see also pages 2 and 3)	**$13.4 billion**

The 1990 standardized death rate of 6.4 per 100,000 population, adjusted to the age distribution of the population in 1940, was 35 per cent below the rate for 1950, despite an increase in deaths for the same period of 27 per cent. In general, nontransport deaths increased while transport deaths decreased.

Year	Total Public	Transport[a]					Nontransport				
		Total[b]	Air	Water		Rail[d]	Total[b]	Falls	Drowning[c]	Firearms	Fires, Burns
				Drowning[c]	Other						
1950	15,000	3,950	1,050	1,000	100	1,450	11,050	2,750	3,750	1,150	500
1955	15,500	3,600	1,300	1,000	100	950	11,900	3,200	4,300	950	450
1960	17,000	3,150	1,150	1,000[e]	100	700	13,850	3,700	4,350	1,100	750
1965	19,500	3,200	1,200	1,000	100	700	16,300	5,300	4,400	900	800
1970	23,500	3,300	1,200	1,200	100	600	20,200	5,000	5,200	900	700
1972	23,500	3,200	1,200	1,200	100	500	20,300	5,100	4,900	900	700
1973	24,500	3,400	1,200	1,300	100	600	20,100	5,000	5,700	1,000	700
1974	23,000	3,200	1,200	1,200	100	500	19,800	5,000	5,100	900	600
1975	23,000	3,000	1,100	1,200	100	400	20,000	4,800	5,200	900	600
1976	21,500	2,800	1,100	1,000	100	400	18,700	4,800	4,400	800	600
1977	22,200	2,900	1,200	1,000	100	400	19,300	4,700	4,700	700	800
1978	22,000	3,200	1,400	1,100	100	400	18,800	4,600	4,600	700	600
1979	21,000	3,100	1,300	1,100	100	400	17,900	4,400	4,400	700	600
1980	21,300	2,900	1,100	1,100	100	400	18,400	4,500	4,700	700	600
1981	19,800	2,700	1,100	900	100	400	17,100	4,300	4,100	700	600
1982	19,500	2,900	1,200	1,000	100	400	16,600	4,100	4,000	700	500
1983	19,400	2,700	1,000	1,000	100	400	16,700	4,100	4,000	700	500
1984	18,300	2,400	900	800	100	400	15,900	4,100	3,300	700	500
1985	18,800	2,500	1,000	800	100	400	16,300	4,100	3,300	600	500
1986	18,700	2,300	800	800	100	400	16,400	3,900	3,600	600	500
1987	18,400	2,300	900	700	100	400	16,100	4,000	3,200	600	500
1988	18,400	2,100	700	700	100	400	16,300	4,100	3,100	600	500
1989	18,700	2,300	900	600	100	500	16,400	4,100	3,200	700	700
1990	19,000	2,100	700	600	100	500	16,900	4,500	3,400	500	600

Source: National Safety Council estimates (1939 revised, 1990 preliminary) based on data from National Center for Health Statistics and state health departments. See page 21 for comparability.

[a]Transport is a primary classification but each class includes deaths from falls, drowning, burns, etc., occurring in connection with each type of transport. [b]Includes some deaths not shown separately.

[c]Nontransport drownings are included in Total drownings in table on pages 31, 32, and 33.

[d]Includes subways and elevateds.

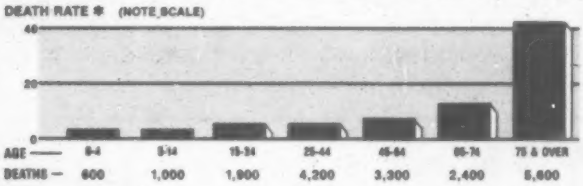
[e]Data for this year and subsequent years not comparable with previous years due to classification changes.

How people died in public accidents, 1990

(For accidental deaths in all places see pages 4 and 5.)

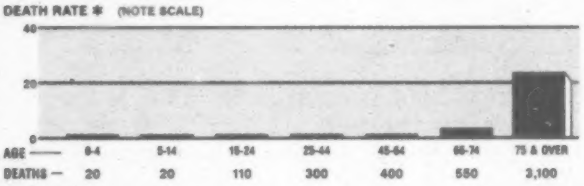
Type of accident and age of victim

	Death Total	Change from 1989	Death Rate*
All public	19,000	+ 2%	7.6



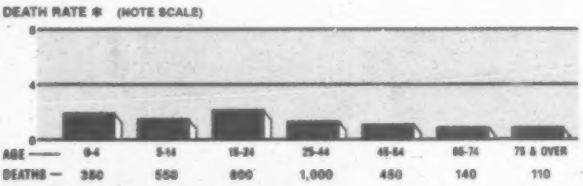
Includes deaths in public places or places used in a public way, and not involving motor vehicles. Most sports and recreation deaths are included. Excludes deaths in the course of employment.

Falls	4,500	+10%	1.8



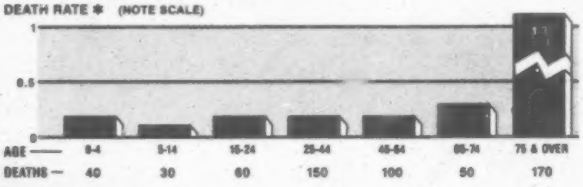
Includes deaths from falls in public places. Excludes deaths in falls from moving vehicles.

Drowning	3,400	+ 6%	1.4



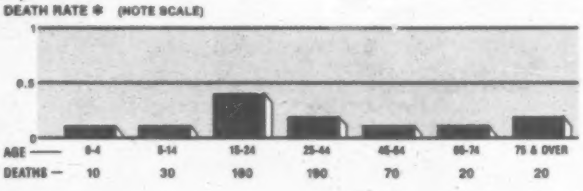
Includes drownings of persons swimming or playing in water, or falling into water, except on home premises or at work. Excludes drownings involving boats, which are in water transportation.

Fires, burns, and deaths associated with fires	600	-14%	0.2



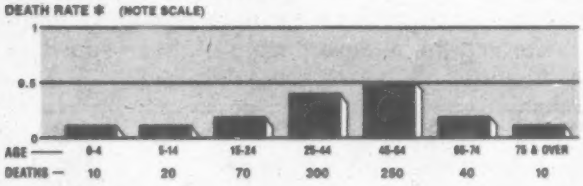
Includes deaths from fires, burns, and injuries in conflagrations in public places—such as asphyxiation, falls, and struck by falling objects. Excludes burns from hot objects or liquids.

Firearms	500	-29%	0.2



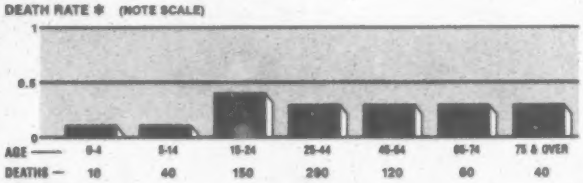
Includes deaths from firearms accidents in public places, including hunting accidents. Excludes deaths from explosive materials.

	Death Total	Change from 1989	Death Rate[a]
Air transport	700[b]	-22%	0.3



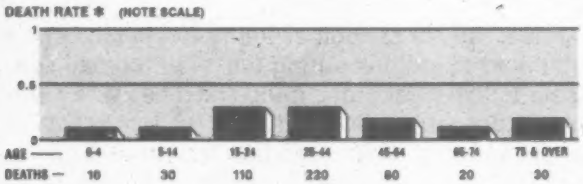
Includes deaths in private flying, passengers in commercial aviation, and deaths of military personnel in accidents in the U.S. Excludes crews and persons traveling in the course of employment.

Water transport	700	0%	0.3



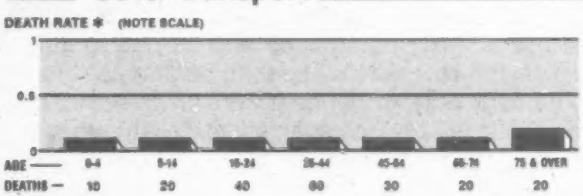
Includes deaths in water transport accidents—from falls, burns, etc., as well as drownings.

Railroad	500	0%	0.2



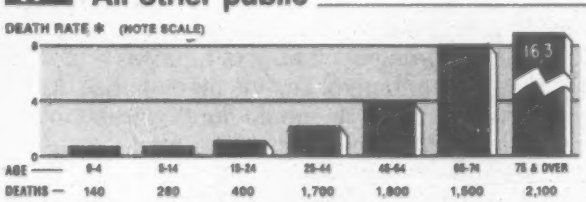
Includes deaths arising from railroad vehicles in motion (except those involving motor vehicles), subway and elevated trains, and persons boarding or alighting from standing trains.

Other transport	200	0%	0.1



Includes deaths in accidents involving pedalcycles, animal-drawn vehicles, street cars, etc., except in collision with motor vehicles. Excludes trolley buses, subways, elevateds, and scooters.

All other public	7,900	+ 3%	3.2

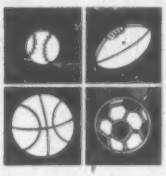


Most important types included are: medical complications, excessive heat or cold, suffocation by ingestion, and poisoning by solid and liquid.

*Deaths per 100,000 population in each age group.

[a]Deaths per 100,000 population.
[b]Excludes persons at work.

Sports Injuries



The table below shows estimates of injuries and participants associated with various sports. Methods and coverage between the two sources may be different and can affect comparisons among sports. Because this list is not complete and the number of participants varies greatly, no inference should be made concerning the relative hazard of these sports or rank with respect to risk of injury.

Sport	Participants	Injuries	Sport	Participants	Injuries
Archery	5,600,000	3,696	Ice hockey	1,500,000	31,342
Baseball	15,400,000	321,806	Ice skating	7,000,000	23,443
Basketball	26,200,000	486,920	Racquetball	8,200,000	13,795
Bicycle riding	56,900,000	514,738	Roller skating	21,500,000	74,994
Billiards	29,600,000	4,153	Skateboarding	7,500,000	65,819
Bowling	40,800,000	17,351	Snowmobiling	[a]	9,985
Boxing	[a]	4,546	Soccer	11,200,000	101,946
Fishing	46,500,000	65,677	Swimming	70,500,000	65,757
Football	14,700,000	319,157	Table tennis	13,700,000	1,732
Golf	23,200,000	24,224	Tennis	18,800,000	22,507
Gymnastics	[a]	34,383	Volleyball	25,100,000	92,961
Handball	[a]	3,942	Water skiing	10,800,000	21,499
Horseback riding	10,100,000	46,928	Wrestling	[a]	36,428

Source: Participants—National Sporting Goods Association (1989); figures include those who participate more than one time per year except for bicycle riding and swimming, which include only those who participate more than six times per year. Injuries—Consumer Product Safety Commission (1989); figures include only hospital emergency room treated injuries.
[a]Data not available.

Football. For the first time since the Annual Survey of Football Injury Research began in 1931, there were no fatalities directly related to football during the 1990 football season. In 1990, however, there were 6 indirect fatalities recorded (those fatalities which are caused by systemic failure as a result of exertion while participating in football activities or by a complication). Three were associated with high school football and three were associated with college football.

Source: Mueller, F.O., & Schindler, R.D. (1991). *Annual Survey of Football Injury Research, 1931-1990.* National Collegiate Athletic Association.

Boating. A total of 865 deaths in recreational boating accidents were reported to the U.S. Coast Guard in 1990. The death total included 707 drownings and 158 deaths from other causes. These totals differ from those shown on pages 85 and 86 due to differences in definitions and coverage. All reported recreational boating accidents totaled 6,411 in 1990; 48 per cent were property damage only, 41 per cent were injury accidents, and 11 per cent were fatal accidents. The Coast Guard, however, estimates that they receive reports regarding only a small fraction of the reportable nonfatal boating accidents.

Hunting. Of 157 fatal hunting injuries in the U.S. in 1989, shotguns were involved in 71 cases, rifles in 64 cases, handguns in 3 cases, and 19 cases involved other and unknown equipment types. Of all 1,632 fatal and nonfatal injuries, shotguns were associated with 958 cases and rifles with 464 cases. Overall, about 33 per cent of the injuries were self-inflicted. However, of the 84 cases involving handguns, 76 were self-inflicted.

Shooters aged 10 to 19 were associated with the greatest number of fatalities and injuries of any age group, and also had the highest percentage of self-inflicted injuries. In 27 per cent of all injuries, the shooter was 10 to 19 years old. Big game hunting was the activity in the greatest percentage of all injuries, about 46 per cent of the total.

Source: Hunter Education Association, *Hunting Accident Report with Graphics of 1985-89 Data.*

Other sports. In 1990, the U.S. Parachute Association reported 23 fatalities, while the U.S. Hang Gliding Association reported eight. According to National Safety Council estimates there were 1,900 swimming fatalities in 1990. The National Underwater Accident Data Center reported 114 recreational underwater diving fatalities in 1989.

Storm data

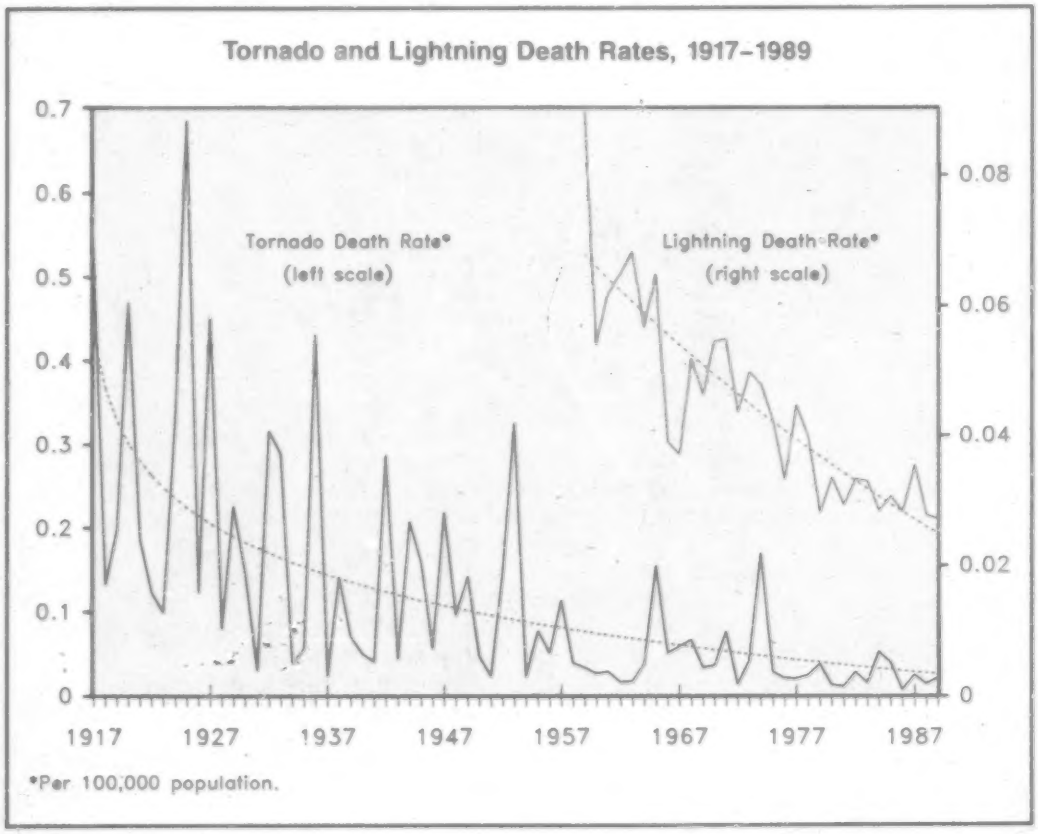
Deaths from storms in the U.S. totaled 372 during 1989, according to the latest data available from the National Climatic Data Center. For specified types of storms, lightning was associated with the most deaths (67), followed by flash floods (62), snow/blizzards (56), tornadoes (50), hurricanes (38), and thunderstorm winds (30). Injuries from storms during 1989 totaled 2,934. Tornadoes were associated with the greatest number of injuries (1,250), followed by thunderstorm winds (454), and hurricanes (439).

Tornadoes. Historically, tornadoes occur most often during the Spring and early Summer months. For the 27,688 tornadoes occurring during the 37-year period from 1953 through 1989, May had the highest average number of tornadoes (166 each year), followed by June (150) and April (104). Together these three months were responsible for about 56 per cent of the average 748 tornadoes each year in the U.S. Tornado deaths averaged 96 each year, ranging from 361 in 1974 to 15 in 1986.

Lightning. Lightning deaths occur most often during the Summer months. For the 2,936 lightning deaths occurring during the 31-year period from 1959 through 1989, July had the highest average number (27 each year), followed by August (20) and June (19). Together these three months were responsible for more than two thirds of the average 95 lightning deaths each year in the U.S.

The graph below shows the tornado death rate per 100,000 population since 1917 and the lightning death rate since 1959, both of which have decreased significantly.

Source: National Climatic Data Center, Asheville, North Carolina, *Storm Data* publications.



Transportation accident statistics

Passenger transportation accidents account for about one fourth of all accidental deaths. But the risk to the passenger, expressed on a per mile basis, varies greatly by transportation mode. Automobile travel presents the greatest risk; air, rail, and bus travel have much lower death rates. The tables below show the latest information on passenger transportation deaths and death rates.

Transportation Accident Death Rates, 1987-1989

Kind of Transportation	1989			1987-1989 Average Death Rate
	Passenger Deaths	Passenger Miles (billions)	Deaths per 100,000,000 Passenger Miles	
Passenger automobiles[a]	24,871	2,228.2	1.12	1.18
Buses	48[b]	125.6	0.04	0.03
School buses	*31*	*80.6*	*0.04*	*0.03*
Transit buses	*1*	*21.0*	*[c]*	*0.01*
Intercity buses	*3*	*24.0*	*0.01*	*0.03*
Railroad passenger trains[c]	8	13.1	0.06	0.07
Scheduled airlines[d]	147	335.1	0.04	0.04

Source: Automobile and bus passenger deaths—Fatal Accident Reporting System data. Railroad passenger deaths—Federal Railroad Administration. Airplane passenger deaths—National Transportation Safety Board. Passenger miles for intercity buses, railroad, and airlines—Transportation Policy Associates, *Transportation in America*, ninth edition, Washington, DC. All other figures—National Safety Council estimates.

[a]Includes taxi passengers. Drivers of passenger automobiles are considered passengers.

[b]Deaths include other and unknown bus types.

[c]Includes commutation.

[d]Includes large airlines and scheduled commuter airlines; excludes cargo service. Rates exclude suicide/sabotage deaths.

[e]Less than 0.005.

Passenger Deaths and Death Rates, 1978-1989

Year	Passenger Cars & Taxis		Buses		Railroad Passenger Trains		Scheduled Airlines	
	Deaths	Rate[a]	Deaths	Rate[a]	Deaths	Rate[a]	Deaths	Rate[a]
1978	28,035	1.26	28	0.03	13	0.12	175	0.09
1979	27,713	1.28	28	0.03	6	0.05	371	0.17
1980	27,339	1.29	42	0.05	4	0.04	28	0.01
1981	26,410	1.25	41	0.05	4	0.04	22	0.01
1982	22,859	1.02	32	0.04	9	0.09	218	0.10
1983	22,739	0.98	49	0.05[b]	4	0.04	17	0.01
1984	23,373	0.98	37	0.03	12	0.11	39	0.02
1985	22,974	0.96	47	0.04	3	0.03	202	0.07
1986	24,704	1.27[b]	36	0.03	4	0.03	7	0.002
1987	24,909	1.22	34	0.03	16	0.13	253	0.07
1988	25,614	1.19	44	0.03	2	0.02	273	0.01
1989	24,871	1.12	48	0.04	8	0.06	147	0.04

Source: See table above.

[a]Deaths per 100,000,000 passenger miles.

[b]Rate not comparable to prior years due to change in estimating procedure.

Passenger automobiles and taxis. Automobile occupants account for about two thirds of all vehicle occupant deaths, and automobiles represent about 70 per cent of the total vehicle miles of travel. The automobile statistics shown in the tables above represent all passenger car usage, both intercity and local.

Buses. School buses transport approximately 22.0 million students each school day, or about 4.0 billion each year. Intercity buses carried 343 million passengers in 1989. A current estimate of the number of transit passengers is not available.

Railroad passenger trains. In 1989, Amtrak accounted for about 45 per cent of the railroad passenger miles and seven of the eight railroad passenger fatalities. Railroads carried about 351 million passengers in 1989.

Scheduled airlines. Of the 147 passenger deaths in 1989 in scheduled service, 122 were on large airlines and 25 were on commuter airlines. Domestic certified airlines carried 421 million passengers in 1989.

U. S. Civil Aviation Accidents, Deaths, and Death Rates, 1986-1990

Year	Accidents		Deaths[a]	Accident Rates			
				Per 100,000 Aircraft-Hours		Per Million Aircraft-Miles	
	Total	Fatal		Total	Fatal	Total	Fatal
Large Airlines[b]							
1986	21	2	5	0.211	0.011	0.0052	0.0003
1987	32	4	231	0.308	0.030	0.0075	0.0007
1988	28	3	285	0.257	0.019	0.0063	0.0005
1989	25	8	131	0.236	0.076	0.0058	0.0018
1990	24	6	39	0.222	0.056	0.0055	0.0014
Commuter Airlines[b]							
1986	15	2	4	0.871	0.116	0.049	0.006
1987	32	10	59	1.660	0.519	0.092	0.029
1988	19	2	21	0.911	0.096	0.050	0.005
1989	17	5	31	0.764	0.225	0.043	0.013
1990	14	2	4	0.628	0.090	0.036	0.005
On-Demand Air Taxis[b]							
1986	116	31	65	3.98	1.06	...	...
1987	97	30	65	3.37	1.04	...	...
1988	96	27	58	3.38	0.95	...	...
1989	113	26	88	3.61	0.83	...	...
1990	104	26	40	3.28	0.82	...	...
General Aviation[b]							
1986	2,576	473	965	8.79	1.61	...	...
1987	2,464	431	807	8.43	1.47	...	...
1988	2,354	447	777	7.94	1.51	...	...
1989	2,201	423	757	7.24	1.38	...	...
1990	2,138	424	736	7.01	1.39	...	...

Source: National Transportation Safety Board: 1990 preliminary, 1986-1989 revised; exposure data for rates from Federal Aviation Administration.

[a]Includes passengers, crew members, and others.

[b]Civil aviation accident statistics collected by the National Transportation Safety Board are classified according to the Federal air regulations under which the flights were made. The classifications are (1) large airlines operating scheduled service under Title 14, Code of Federal Regulations, part 121 (14 CFR 121); (2) commuter carriers operating scheduled service under 14 CFR 135; (3) unscheduled "on-demand" air taxis under 14 CFR 135; and (4) "general aviation," which includes accidents involving aircraft flown under rules other than 14 CFR 121 and 14 CFR 135. Suicide/sabotage is included in accident and fatality totals but excluded from rates. Not shown in the table is nonscheduled air carrier operations under 14 CFR 121 which experienced 2 accidents and no fatalities in 670,000 aircraft-hours flown during 1990.

Worldwide Airline Fatalities

Worldwide passenger deaths in scheduled air services totaled 440 in 1990, according to the International Civil Aviation Organization, a specialized agency of the United Nations with 162 member states. The death rate per 100 million passenger miles in 1990 was 0.04. Aircraft accidents involving a passenger fatality totaled 22.

Deaths and death rates recorded decreases in 1990 from 1989. Passenger deaths per year averaged 640 for the last 10 years.

Year	Aircraft Accidents[a]	Passenger Deaths	Death Rate[b]	Year	Aircraft Accidents[a]	Passenger Deaths	Death Rate[b]
1971	32	884	0.35	1981	21	362	0.06
1972	41	1,209	0.42	1982	26	764	0.13
1973	36	862	0.27	1983	20	809	0.13
1974	29	1,299	0.38	1984	16	223	0.03
1975	21	467	0.13	1985	22	1,066	0.15
1976	20	734	0.19	1986	17	331	0.04
1977	24	516	0.12	1987	24	890	0.10
1978	25	754	0.15	1988	25	699	0.08
1979	31	877	0.16	1989	27	817	0.08
1980	22	814	0.14	1990[c]	22	440	0.04

Source: International Civil Aviation Organization. Figures exclude USSR.

[a]Involving a passenger fatality. [b]Passenger deaths per 100 million passenger miles. [c]Preliminary.

Deaths and Injuries in Railroad Accidents, 1933-1990

Year	Casualties Not at Public Grade-Crossings	All Casualties					
		Total	Passengers on Trains[a]	Employees on Duty		Other Nontres-passers[a]	Tres-passers
				Number	Rate[b]		
			DEATHS[c]				
1933	3,796	5,434	47	571	0.25	1,791	3,025
1943	3,426	5,302	271	1,089	0.29	2,154	1,788
1953[d]	1,518	3,110	50	339	0.12	1,712	1,009
1963	896	2,268	13	195	0.13	1,466	594
1973	721	1,989	6	166	0.15	1,225	592
1982	539	1,119	9	78	0.10	531	501
1983	531	1,073	4	61	0.08	536	472
1984	637	1,247	12	59	0.08	588	588
1985	499	1,036	3	46	0.07	513	474
1986	513	1,091	4	57	0.09	511	519
1987	567	1,165	16	55	0.09	510	584
1988	547	1,199	2	43	0.07	556	598
1989	567	1,324	8	49	0.08	626	641
1990	651	1,296	3	40	0.07	553	700
			INJURIES[c]				
1933	23,509	27,079	1,963	15,512	6.71	5,806	3,798
1943	55,884	59,957	5,013	45,685	11.79	7,989	1,270
1953[d]	25,302	29,019	2,460	19,352	6.93	6,288	919
1963	23,839	27,329	2,135	19,397	12.56	5,162	635
1973	14,948	18,148	503	13,066	11.99	3,979	600
1982	37,767	40,275	387	36,032	44.96	3,185	671
1983	32,352	34,819	502	30,416	41.36	3,218	683
1984	35,847	38,570	1,000	33,364	44.93	3,433	773
1985	31,796	34,304	657	29,822	42.79	3,091	734
1986	24,595	26,923	686	22,387	34.74	3,144	706
1987	23,720	26,033	475	21,982	35.51	2,903	673
1988	24,637	27,054	337	22,573	37.12	3,224	920
1989	24,032	26,715	399	22,183	38.35	3,235	898
1990	22,903	25,143	473	20,972	37.86	2,905	793

Source: Federal Railroad Administration. Includes train accidents, train incidents, and nontrain incidents. See lower table for footnotes. (1990 preliminary.)

Rail-Highway Public Grade-Crossing Accidents, 1943-1990

Year	Deaths[c]				Nonfatal Injuries[c]			
	Total	Motor-Vehicle	Pedestrian	Other	Total	Motor-Vehicle	Pedestrian	Other
1943	1,876	1,525	325	26	4,073	3,831	147	95
1953[d]	1,592	1,419	152	21	3,717	3,632	57	28
1963	1,372	1,286	71	15	3,454	3,366	33	55
1973	1,233	1,078	78	77	3,259	3,115	37	107
1982	580	526	36	18	2,508	2,417	22	69
1983	542	483	37	22	2,467	2,372	29	66
1984	610	543	40	27	2,723	2,597	25	101
1985	537	480	31	26	2,508	2,395	21	92
1986	578	507	44	27	2,328	2,227	36	65
1987	598	533	44	21	2,313	2,239	27	47
1988	652	594	41	17	2,417	2,344	34	39
1989	757	682	54	21	2,683	2,615	32	36
1990	645	565	59	21	2,240	2,173	25	42

Source: Federal Railroad Administration data for public grade-crossing accidents only. (1990 preliminary.)

[a]Federal Railroad Administration definitions are "Persons on or getting on or off passenger-carrying trains under conditions not constituting trespass are designated as 'passengers on trains.' Other persons lawfully on railroad premises in connection with their journeys by railroads are designated as 'travelers not on trains'"; in 1957 and later years these were included with "other nontrespassers."

[b]Prior to 1975, rates are for Class I railroads only, which account for more than nine tenths of railroad exposure. Employee work hours for other railroads were not available. The rates are the number of deaths or injuries per million hours worked. Because of differences in definitions the injury rates are not comparable with those for other industries shown elsewhere in *Accident Facts*.

[c]From 1961 through 1974, the F. R. A. classified those cases where death occurred more than 24 hours after the injury as nonfatal injuries. In the tables above these cases are included as deaths. Effective with 1975, subsequent deaths are classified as deaths; injuries that disable a person for less than three days are now counted.

[d]Changes in F. R. A. reporting rules make comparisons invalid for 1933-1953 with subsequent years.

HOME ACCIDENTS, 1990

Between 1912 and 1990, accidental home deaths per 100,000 population were reduced 68 per cent from 28 to 9. In 1912, when there were 21 million homes, an estimated 26,000 to 28,000 persons were killed in home accidents. In 1990, with 93 million homes and the population more than doubled, accidental home deaths numbered only 21,500.

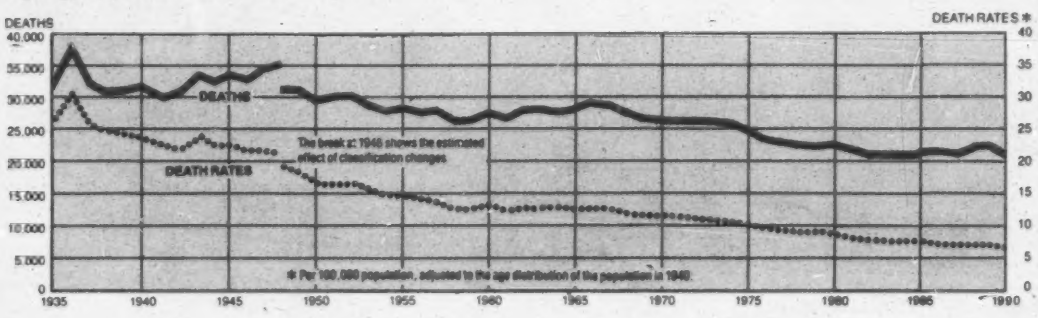
Deaths	**21,500**
Disabling injuries	**3,200,000**
Death rate per 100,000 population	**8.6**
Cost (see also pages 2 and 3)	**$23.5 billion**

The injury total of 3,200,000 means that one person in 78 in the U.S. was disabled one or more days by injuries received in home accidents in 1990. About 90,000 of these injuries resulted in some permanent impairment. Disabling injuries are more numerous for home accidents than for any other class of accident.

The National Health Interview Survey indicates that about 17,569,000 home injuries occurred in 1989 (the latest year available). This means that about one person in 14 incurred a home injury requiring medical attention or resulting in one-half day or more of restricted activity. Approximately 160,895,000 days of restricted activity and 57,463,000 days of bed disability resulted from injuries in and around the home. See page 12 for definitions and numerical differences between National Health Interview Survey and National Safety Council figures.

Trends in home accidental deaths and standardized rates

The 1990 standardized death rate of 6.9 per 100,000 population, adjusted to the age distribution of the population in 1940, was 71 per cent below the rate for 1935. Deaths from home accidents in 1990 numbered about 24 per cent below 1935, after adjusting for the 1948 change in classification. Decreases of more than 60 per cent occurred in the 0 to 4 and 5 to 14 year age groups. Deaths of those 25 to 64 years old, however, increased by 5 per cent from 1935. The age distribution of the population has also changed since 1935, especially for the group 65 and over, who now comprise about 12 per cent of the population compared to 6 per cent in 1935. The death rate per 100,000 population for this age group has decreased by four fifths.

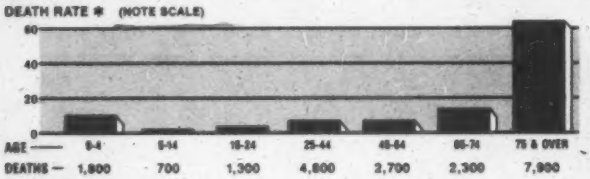


How people died in home accidents, 1990

(For accidental deaths in all places see pages 4 and 5.)

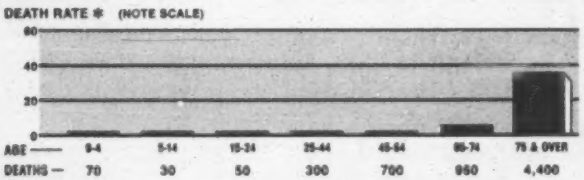
Type of accident and age of victim

	Death Total	Change from 1989	Death Rate*
All home	21,500	- 6%	8.6



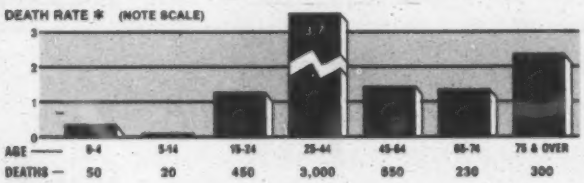
Includes deaths in the home and on home premises to occupants, guests, and trespassers. Also includes domestic servants but excludes other persons working on home premises.

Falls	6,500	- 4%	2.6



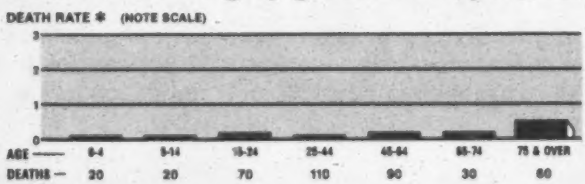
Includes deaths from falls from one level to another (stairs, ladder, roof, etc.), and on the same level (floor, ground, sidewalk, etc.).

Poisoning by solids and liquids	4,700	- 2%	1.9



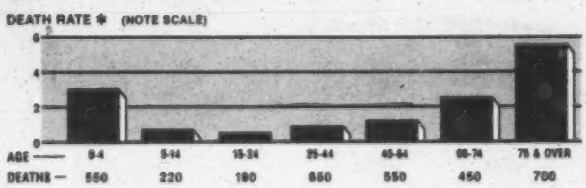
Includes deaths from drugs, medicines, mushrooms and shellfish, as well as commonly recognized poisons. Excludes poisonings from spoiled foods, salmonella, etc.—which are classified as disease deaths.

Poisoning by gases and vapors	400	-20%	0.2



Principally carbon monoxide due to incomplete combustion, involving cooking stoves, heating equipment and standing motor vehicles. Gas poisonings in conflagrations are classified as fire deaths.

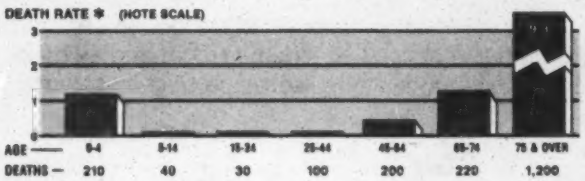
Fires, burns, and deaths associated with fires	3,300	- 8%	1.3



Includes deaths from fires, burns, and from injuries in conflagrations in the home—such as asphyxiation, falls, and struck by falling objects. Excludes burns from hot objects or liquids.

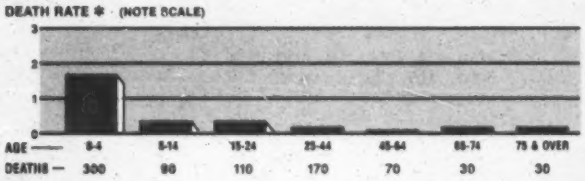
	Death Total	Change from 1989	Death Rate*
Suffocation–ingested object	2,000	–20%	0.8

Includes deaths from accidental ingestion or inhalation of objects or food resulting in the obstruction of respiratory passages.



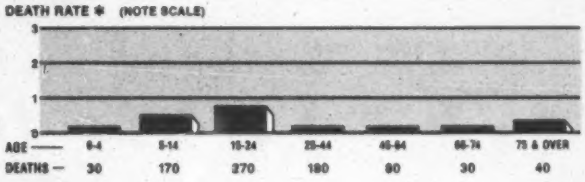
Suffocation–mechanical	800	0%	0.3

Includes deaths from smothering by bed clothes, thin plastic materials, etc., suffocation by cave-ins or confinement in closed spaces, and mechanical strangulation.



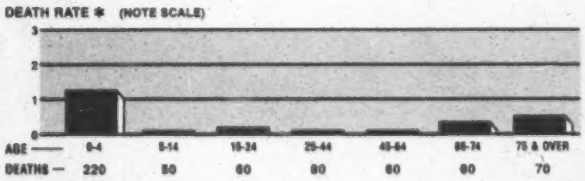
Firearms	800	0%	0.3

Includes firearms accidents in or on home premises—such as while cleaning or playing with guns. Excludes deaths from explosive materials.



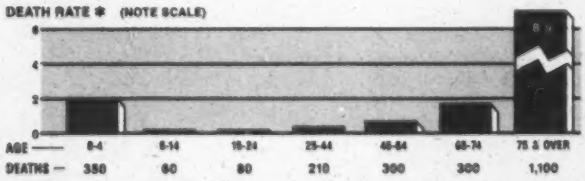
Drowning	600	0%	0.2

Includes drownings of persons in or on home premises—such as in swimming pools and bathtubs. Excludes drownings in floods and other cataclysms.



All other home	2,400	0%	1.0

Most important types included are: electric current, explosive materials, and hot substance, corrosive liquid, and steam.



*Deaths per 100,000 population in each age group.

*Deaths per 100,000 population.

Injuries associated with consumer products

The following list of items found in and around the home was selected from the U.S. Consumer Product Safety Commission's National Electronic Injury Surveillance System (NEISS) for 1989. The NEISS estimates are calculated from a sample of statistically representative hospitals in the U.S. Injury totals represent estimates of the number of hospital emergency room-treated cases nationwide associated with various products. However, product involvement may or may not be the cause of the accident.

Estimated Injuries Related to Selected Consumer Products, 1989

Product	Injuries[a]
Home Maintenance:	
Noncaustic cleaning equip., detergents	19,328
Cleaning agents (except soaps)	35,673
Miscellaneous household chemicals	17,126
Paints, solvents, lubricants	17,649
Drain, oven cleaners, caustics	10,006
Home Workshop Equipment:	
Batteries, all types	11,967
Hoists, lifts, jacks, etc.	10,899
Miscellaneous workshop equipment	33,561
Power home tools, except saws	22,002
Power home workshop saws, all	71,074
Welding, soldering, cutting tools	15,276
Wires, cords, not specified	11,361
Workshop manual tools	88,813
Packaging & Containers, Household:	
Cans, other containers	179,484
Glass bottles, jars	71,058
Paper, cardboard, plastic products	32,670
Housewares:	
Cookware, pots, pans	29,888
Cutlery, knives, unpowered	335,083
Drinking glasses	114,682
Miscellaneous housewares	48,685
Scissors	21,144
Small kitchen appliances	36,945
Tableware and accessories	106,400
Home Furnishings, Fixtures and Accessories:	
Bathtub, shower structures	125,829
Beds, mattresses, pillows	302,190
Carpets, rugs	87,739
Chairs, sofas, sofa beds	305,896
Desks, cabinets, shelves, racks	164,451
Electric fixtures, lamps, equipment	38,787
Ladders, stools	131,551
Mirrors, mirror glass	21,630
Other misc. furniture, accessories	40,287
Sinks, toilets	43,162
Tables, all types	265,268
Home Structures and Construction Materials:	
Cabinets or door hardware	17,993
Ceilings, walls, panels (inside)	189,317
Counters, counter tops	27,121
Fences	105,919
Glass doors, windows, panels	182,725
Handrails, railings, banisters	37,284
Miscellaneous construction materials	67,711
Nails, carpet tacks, etc	214,123
Nonglass doors, panels	281,310
Porches, open side floors, etc.	92,840
Stairs, ramps, landings, floors	1,450,421
Window, door sills, frames	44,373

Product	Injuries[a]
General Household Appliances:	
Cooking ranges, ovens, etc.	41,727
Irons, clothes steamers (not toys)	18,193
Miscellaneous household appliances	26,356
Refrigerators, freezers	31,630
Washers, dryers	19,108
Heating, Cooling, and Ventilating Equipment:	
Radiators, all	18,103
Chimneys, fireplaces	14,355
Fans (except stove exhaust fans)	15,866
Heating stoves, space heaters	32,458
Pipes, heating and plumbing	24,744
Home Communication, Entertainment and Hobby Equipment:	
Miscellaneous hobby equipment	11,955
Pet supplies, equipment	17,845
Sound recording, reproducing equipment	35,006
Television sets, stands	34,949
Personal Use Items:	
Cigarettes, lighters, fuel	21,092
Clothing, all	102,397
Grooming devices	27,013
Holders for personal items	12,799
Jewelry	43,868
Paper money, coins	28,745
Pencils, pens, other desk supplies	42,407
Razors, shavers, razor blades	35,401
Sewing equipment	27,629
Yard and Garden Equipment:	
Chain saws	37,278
Hand garden tools	29,988
Hatchets, axes	15,013
Lawn, garden care equipment	38,636
Lawn mowers, all types	61,864
Trimmers, small power garden tools	12,150
Other power lawn equipment	13,556
Sports & Recreation Equipment:	
All-terrain vehicles, mopeds, minibikes	106,792
Barbecue grills, stoves, equipment	13,324
Bicycles, accessories	514,738
Exercise equipment	67,028
Nonpowder guns, BBs, pellets	24,044
Playground equipment	210,236
Skateboards	65,819
Toboggans, sleds, snow disks, etc	35,008
Trampolines	15,866
Miscellaneous Products:	
Dollies, carts	35,563
Elevators, other lifts	14,198
Gasoline and diesel fuels	13,534
Fireworks	9,800
Nursery equipment	91,909
Toys	147,898

Source: Consumer Product Safety Commission, National Electronic Injury Surveillance System.
[a]Estimated number of product-related injuries in the U.S. and territories which were treated in hospital emergency departments in 1989. Not all product categories are shown.

Firearms

Firearms deaths from accidents, suicides, homicides and undetermined causes totaled 33,757 in 1988 (see table below), excluding 232 deaths which occurred during legal intervention. The all ages category shows that over 80 per cent of deaths were males. By age, totals for accidents are almost equal for the 15 to 24 and 25 to 44 year age groups, although the death rate per 100,000 population (not shown below) is highest for the 15 to 24 year age group. For suicides, totals are highest for the 25 to 44 year age group, although the rate is highest for those 75 and over. For homicides, deaths are highest for those aged 25 to 44, but rates are highest for those aged 15 to 24.

Type and Sex	1988 Firearms Deaths by Age							
	All Ages	Under 5	5-14	15-24	25-44	45-64	65-74	75 & Over
Total Firearms Deaths[a]	**33,757**	**101**	**647**	**7,805**	**14,207**	**6,069**	**2,630**	**2,298**
Male	28,449	62	489	6,854	11,745	4,962	2,267	2,070
Female	5,308	39	158	951	2,462	1,107	363	228
Accidents	**1,501**	**41**	**236**	**466**	**477**	**174**	**61**	**46**
Male	1,304	28	200	437	398	150	56	35
Female	197	13	36	29	79	24	5	11
Suicide	**18,169**	**...**	**126**	**3,015**	**6,514**	**4,244**	**2,241**	**2,029**
Male	15,656	...	98	2,658	5,475	3,535	2,001	1,889
Female	2,513	...	28	357	1,039	709	240	140
Homicide	**13,845**	**59**	**253**	**4,199**	**7,054**	**1,589**	**296**	**195**
Male	11,134	34	163	3,648	5,757	1,224	185	123
Female	2,511	25	90	551	1,297	365	111	72
Undetermined[b]	**442**	**1**	**32**	**125**	**162**	**62**	**32**	**28**
Male	355	0	28	111	115	53	25	23
Female	87	1	4	14	47	9	7	5

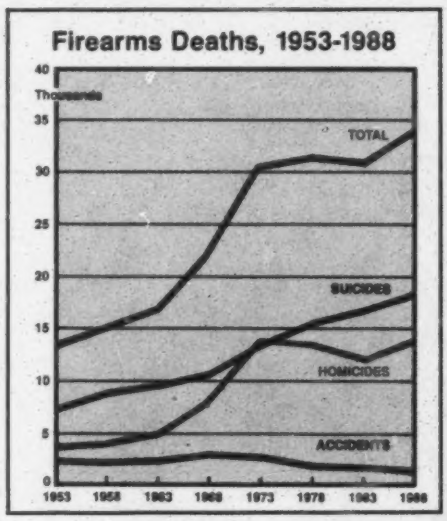
Source: National Safety Council tabulations of National Center for Health Statistics data.
[a]Excludes firearms deaths by legal intervention. These deaths totaled 232 in 1988.
[b]Undetermined means the intentionality of the death (accident, suicide, homicide) cannot be determined.

Type of Firearm. Data show that 4,512 firearms deaths were due to handguns in 1988, 3,700 firearms deaths were due to shotguns, and 1,447 firearms deaths were due to hunting rifles. The type of firearm was not listed on the death certificate for at least 71 per cent of firearms deaths in 1988, thus these totals are understated.

Race. The total firearms death rate per 100,000 population for blacks is over twice the rate for whites. Blacks account for 25 per cent of all firearms deaths, but only 12 per cent of the United States population. Rates for homicide by firearms are over seven times higher for blacks, but the firearms suicide rate is half that for whites.

Trend. Firearms deaths more than doubled between 1953 and 1988 (see graph at right). Accidental deaths have decreased by about one-third, suicides have more than doubled and homicides have more than tripled.

Costs. According to Rice and MacKenzie[a], intentional and accidental firearms injuries are less than 0.5 per cent of total injuries, yet they are 9 per cent, or $14.4 billion, of the $157.6 billion lifetime cost of injuries. The cost of firearms injuries is ranked third behind injuries caused by motor vehicles and falls. The high cost is due to the large number of firearm-related injuries for youths.



[a]Rice, D.P., MacKenzie, E.J., *et al.* (1989). *Cost of Injury in the United States.* San Francisco: University of California.

Accidental fatal and nonfatal poisonings

Accidental deaths from solid and liquid poisoning increased by 21 per cent from 4,415 in 1987 to 5,353 in 1988, the latest year for which detailed tabulations are available. Deaths attributed to local anesthetics, including cocaine, increased by almost 40 per cent, rising from 777 fatalities in 1987 to 1,087 fatalities in 1988.

Over the last 30 years, the number and circumstances of accidental death from solid and liquid poisoning have changed greatly. Since 1958, the death rate per 100,000 population has almost tripled from 0.8 to 2.2 in 1988. The 25 to 44 year age group had the greatest increase in death rates, from 0.8 in 1958 to 4.2 in 1988. The death rate for the 0 to 4 year age group has fallen dramatically, from 2.1 in 1958 to 0.2 in 1988.

Due to classification changes, death figures by type of poisoning are only comparable since 1979. The number of deaths from drugs, medicaments and biologicals has increased steadily since 1979, while the number of deaths from other solid and liquid poisons, including household chemicals, has decreased.

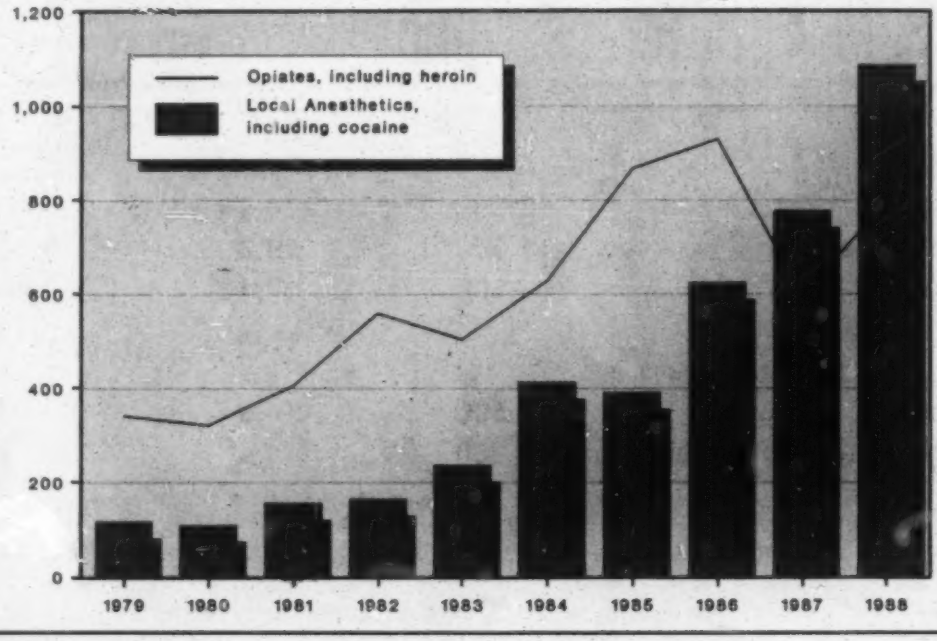
Total human poisoning exposures, both fatal and nonfatal, were projected at more than 2.1 million in 1989, according to the American Association of Poison Control Centers.

Poisoning by Type and Age, Accidental Deaths, 1988

Deaths by Type of Poisoning	All Ages	Under 5 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65 Years and Over
Total Poisoning by Solids and Liquids	**5,353**	**42**	**24**	**462**	**3,344**	**826**	**655**
Rate (deaths per 100,000 population)	2.2	0.2	0.1	1.2	4.2	1.8	2.2
Male	*3,811*	*28*	*14*	*344*	*2,620*	*527*	*278*
Female	*1,542*	*14*	*10*	*118*	*724*	*299*	*377*
Drugs, medicaments, biologicals	**4,865**	**29**	**13**	**418**	**3,163**	**655**	**587**
Male	*3,441*	*20*	*3*	*310*	*2,477*	*396*	*235*
Female	*1,424*	*9*	*10*	*108*	*686*	*259*	*352*
Analgesics, antipyretics, antirheumatics	1,190	3	1	69	871	177	69
Opiates, related narcotics	*798*	*0*	*0*	*39*	*644*	*101*	*14*
Salicylates (incl. aspirin)	*80*	*3*	*0*	*1*	*18*	*26*	*32*
Other, unspecified analgesics, antipyretics, antirheumatics	*312*	*0*	*1*	*29*	*209*	*50*	*23*
Barbiturates	29	0	0	1	14	6	8
Other sedatives, hypnotics	30	0	0	3	18	6	3
Tranquilizers	83	0	0	5	36	31	11
Other psychotropic agents	229	3	0	15	140	59	12
Other drugs acting on central and autonomic nervous system (incl. local anesthetics)	1,181	3	3	179	882	83	31
Antibiotics	60	0	2	0	4	21	33
Anti-infectives	2	0	0	1	0	0	1
Other drugs	2,061	20	7	145	1,198	272	419
Cardiovascular drugs	*260*	*6*	*1*	*0*	*3*	*22*	*228*
Gastrointestinal drugs	*4*	*0*	*0*	*0*	*1*	*0*	*3*
Other, unspecified drugs	*1,797*	*14*	*6*	*145*	*1,194*	*250*	*188*
Other solids and liquids	**488**	**13**	**11**	**44**	**181**	**171**	**68**
Male	*370*	*8*	*11*	*34*	*143*	*131*	*43*
Female	*118*	*5*	*0*	*10*	*38*	*40*	*25*
Alcohol	334	2	0	22	130	147	33
Cleansing, polishing agents, disinfectants, paints, varnishes	14	2	0	1	2	3	6
Petroleum products, other solvents and their vapors	58	5	9	12	25	6	1
Agricultural, horticultural chemical, pharmaceutical preparations	14	1	0	1	5	2	5
Corrosives, caustics	12	2	0	1	2	2	5
Foodstuffs, poisonous plants	3	0	0	1	2	0	0
Other, unspecified solids and liquids	53	1	2	6	15	11	18
Total Poisoning by Gases and Vapors	**873**	**36**	**29**	**154**	**319**	**183**	**152**
Rate (deaths per 100,000 population)	0.4	0.2	0.1	0.4	0.4	0.4	0.5
Male	*650*	*22*	*15*	*115*	*241*	*151*	*106*
Female	*223*	*14*	*14*	*39*	*78*	*32*	*46*
Gas distributed by pipeline	36	0	2	5	12	6	11
Other utility gas, other carbon monoxide	686	21	24	118	259	158	106
Other gases and vapors	151	15	3	31	48	19	35

Source: National Center for Health Statistics. See pages 31, 32, and 33 for earlier year totals; see page 21 for comparability.

Accidental Poisoning Deaths by Selected Drugs, 1979-1988



Home Accident Deaths by Type of Accident, 1950-1990

(See also pages 26 and 27 for Total deaths and rates for earlier years)

Year	Total Home	Falls	Fires, Burns[a]	Suffo.-ing. Obj.	Suffo.-Mech.	Poison (solid, liquid)	Poison by Gas	Fire-arms	Other
1950	29,000	14,800	5,000	[b]	1,600	1,300	1,250	950	4,100
1955	28,500	14,100	5,400	[b]	1,250	1,150	900	1,100	4,600
1960	28,000	12,300	6,350	1,850	1,500	1,350	900	1,200	2,550
1965	28,500	11,700	6,100	1,300[c]	1,200	1,700	1,100	1,300	4,100[c]
1970	27,000	9,700	5,600	1,800[c]	1,100[c]	3,000	1,100	1,400[c]	3,300[c]
1971	26,500	9,300	5,600	1,900	1,000	3,000	1,000	1,300	3,400
1972	26,500	9,300	5,500	1,800	900	3,000	1,000	1,400	3,600
1973	26,500	9,200	5,300	1,900	1,100	3,000	1,000	1,500	3,500
1974	26,000	9,000	5,100	1,800	900	3,200	900	1,400	3,700
1975	25,000	8,000	5,000	1,800	800	3,700	1,000	1,300	3,400
1976	24,000	7,700	5,200	1,800	700	3,300	1,000	1,200	3,100
1977	23,200	7,400	5,000	1,800	800	2,700	1,000	1,100	3,400
1978	22,800	7,400	5,100	1,800	800	2,400	1,100	1,000	3,200
1979	22,500	7,100	4,900	2,000	500	2,500	900	1,100	3,500
1980	22,800	7,100	4,800	2,000	500	2,500	700	1,100	4,100[d]
1981	21,700	6,800	4,700	2,000	500	2,600	800	1,000	3,300
1982	21,200	6,500	4,300	2,100	600	2,700	800	1,000	3,200
1983	21,200	6,500	4,100	2,200	600	2,700	800	900	3,400
1984	21,200	6,400	4,100	2,300	600	3,000	700	900	3,200
1985	21,600	6,500	4,000	2,400	600	3,200	700	900	3,300
1986	21,700	6,100	4,000	2,500	600	3,700	600	800	3,400
1987	21,400	6,300	3,900	2,500	600	3,500	600	800	3,200
1988	22,700	6,600	4,100	2,600	600	4,300	500	800	3,200
1989	22,800	6,800	3,600	2,500	800	4,800	500	800	3,000
1990	21,500	6,500	3,300	2,000	800	4,700	400	800	3,000

Source: National Safety Council estimates (1989 revised, 1990 preliminary) based on data from National Center for Health Statistics and state health departments. See page 21 for comparability.

[a]Includes deaths resulting from conflagration, regardless of nature of injury. [b]Included in Other.

[c]Data for this year and subsequent years not comparable with previous years due to classification changes.

[d]Includes about 1,000 excessive heat deaths due to summer heat wave.

FARM RESIDENT ACCIDENTS, 1990

	Deaths	Deaths per 100,000 Farm Residents	Disabling Injuries
Total	**2,500**	**54.4**	**230,000**
Motor-vehicle	**1,300**[a]	**28.3**	**50,000**
Work (farm residents only)	**800**[a]	**17.4**	**80,000**
In farm work	700	15.2	70,000
In nonfarm work off farm	100	2.2	10,000
Home	**500**	**10.9**	**80,000**
Public nonmotor-vehicle	**200**	**4.4**	**30,000**

[a]Motor-vehicle deaths and injuries in work activities are included in both the Motor-vehicle and Work totals. The duplication amounted to about 300 deaths and 10,000 injuries in 1990.

The farm resident figures above are National Safety Council estimates of all accidental deaths and injuries of persons who live on farms. Included are deaths and injuries from accidents which occurred to farm residents both on and off farm property. Excluded are those from accidents which occurred on farms to nonresidents of farms. Also excluded are agricultural work deaths and injuries of workers who were nonresidents of farms. The U.S. Bureau of the Census reports that nonfarm residents comprised 64 per cent of the average 3.3 million persons employed in agricultural industries in 1989.

The Census Bureau also reports that 1.2 million farm residents (47 per cent of the employed farm resident labor force) worked solely, or primarily in the case of multiple job holders, in agriculture in 1989. Of farm residents employed in nonagricultural industries in 1989, over one half worked in services or manufacturing.

In 1989, 630,000 multiple job holders combined primary employment in a nonagricultural industry with a secondary job (mostly self-employment) in agriculture. Because worker totals on page 34 include only persons with primary employment in agriculture, the accidental death rate for agriculture would be reduced slightly if the influence on accident exposure of individuals with secondary employment in agriculture is considered. Similar adjustments would also reduce rates for other industries.

Work deaths and death rates in agriculture

The term agriculture includes not only production of crops and livestock (farming), but also agricultural services, forestry, and fishing. (Forestry excludes logging which is included in the manufacturing industry group.) There were 1,300 agricultural work deaths in 1990, of which 700 involved farm residents in farm work and 600 involved nonfarm residents working on farms and anyone working in other industries classified as agriculture. The corresponding injury totals were 120,000 in agricultural work — 70,000 to farm residents and 50,000 to others.

The 800 farm resident work deaths shown above consist of 700 deaths in farm work (included in the agricultural total) and 100 deaths in nonfarm work off the farm.

The death rates shown above are comparable to other population death rates in *Accident Facts* but are not comparable to death rates based on workers only.

Tractor fatality rates on the farm

Overturns have the highest fatality rate for tractor accidents occurring on the farm according to reports from 18 states covering over 40 per cent of the farm tractors in the U.S. In 1990, overturns accounted for 52 per cent of all on-the-farm tractor fatalities reported, with an annual rate of 5.1 deaths per 100,000 tractors.

For all tractor fatalities combined, projecting the overall rate of 9.9 deaths per 100,000 tractors in this sample to the nation's approximately 4.62 million tractors yields an estimated 460 tractor-related deaths on the farm nationwide.

Tractor Fatality Rates on the Farm by Type of Accident, 1970-1990

	Deaths per 100,000 Tractors					Per Cent of Deaths				
Year	All Types	Over-turns	Run Over	Power Takeoff	Other	Total	Over-turns	Run Over	Power Takeoff	Other
1970	14.9	7.3	4.6	0.7	2.3	100%	49	31	5	15
1975	11.9	6.9	2.1	0.6	2.3	100%	58	18	5	19
1979	12.8	6.0	4.5	0.8	1.5	100%	47	35	6	12
1980	11.5	5.5	3.4	0.9	1.7	100%	48	29	8	15
1981	7.9	4.6	1.5	0.6	1.2	100%	58	20	7	15
1982	8.1	3.9	1.6	0.3	2.3	100%	49	20	4	27
1983	8.3	4.8	1.8	0.1	1.6	100%	58	22	1	19
1984	7.3	3.8	2.1	0.2	1.2	100%	52	29	2	17
1985	7.3	3.7	1.9	0.5	1.2	100%	51	26	7	16
1986	9.3	4.1	2.1	0.6	2.5	100%	44	23	6	27
1987	10.9	5.6	2.6	0.4	2.3	100%	52	24	3	21
1988	8.6	3.7	2.4	0.6	1.7	100%	44	29	7	20
1989	7.2	4.0	1.1	0.2	2.0	100%	55	15	2	28
1990	9.9	5.1	3.3	0.3	1.2	100%	52	33	3	12

Source: Deaths based on reports from vital statistics registrars and individual case reports; tractors based on U.S. Census of Agriculture, 1987, estimated for 1990 by *Implement & Tractor.*

Farmers' Perceptions of Safety and Health Problems

About 73 per cent of farmers believe that their industry is more hazardous than other industries, according to recent data from New York and Iowa. Along with Washington and South Carolina, these states recently conducted the Farm Family Survey, a phone and mail survey intended to assess knowledge, attitudes, and behaviors regarding agricultural safety and health.

When asked to compare various farm-related concerns, New York and Iowa survey respondents generally rated health and safety concerns equal to or higher than general environmental concerns, soil erosion and farm commodity prices. Stress, chemicals, trauma, and respiratory conditions were the health conditions causing greatest concern.

Regarding incidence of injury and illness, nearly half of the farmers reported experiencing serious occupational stress. Breathing problems and back problems were each reported by more than one fourth of those surveyed, and more than one fifth reported animal related trauma.

Of farm-related health care services available, those rated most important include a telephone information hot line, health screening for pesticide exposure, water sampling for chemicals, and health screening tests to identify respiratory conditions.

The Farm Family Survey is an effort to gather attitudinal information from farmers so that their perceptions and concerns can be integrated into the process of policy development. Some previous efforts have been impeded because health experts did not understand farmers' views of safety and health issues.

Source: Thu, K., Donham, K.J., Yoder, D., & Ogilvie, L. (1990). The farm family perception of occupational health: a multistate survey of knowledge, attitudes, behaviors, and ideas. *American Journal of Industrial Medicine, 18* (4), 427-431.

Accidental Deaths of Farm Residents by Class, 1971-1990

Year	Total	Motor-Vehicle[a]	Work[a]	Home	Public	Farm Population[b]	Death Rate[c]
1971	6,300	3,200	1,700	1,300	750	9,425	66.8
1972	6,400	3,300	1,700	1,300	750	9,610	66.6
1973	6,300	3,200	1,700	1,250	800	9,472	66.5
1974	5,800	2,800	1,600	1,200	750	9,264	62.6
1975	5,700	2,700	1,800	1,100	700	8,864	64.3
1976	5,600	2,800	1,700	1,000	650	8,253	67.9
1977	5,300	2,700	1,600	900	600	7,806	67.9
1978 (Old Defn.)[d]	5,400	2,800	1,600	900	600	8,005	67.5
1978 (New Defn.)[d]	4,400	2,300	1,300	750	450	6,501	67.7
1979	4,200	2,200	1,300	700	400	6,241	67.3
1980	4,000	2,100	1,300	700	350	6,051	66.1
1981	3,700	2,000	1,200	600	300	5,850	63.2
1982	3,300	1,700	1,100	600	250	5,628	58.6
1983	3,200	1,600	1,100	600	250	5,787	55.3
1984	3,200	1,700	1,000	600	250	5,754	55.6
1985	3,000	1,500	1,000	550	300	5,355	56.0
1986	2,900	1,600	1,000	450	250	5,226	55.5
1987	2,800	1,500	1,000	450	150	4,986	56.2
1988	2,800	1,500	900	500	200	4,951	56.6
1989	2,700	1,400	900	500	200	4,801	56.2
1990[e]	2,500	1,300	800	500	200	4,591	54.4

Source: National Safety Council estimates.
[a]See footnotes to the table on page 100.
[b]Census Bureau figures (000 omitted)
[c]Deaths per 100,000 farm residents.
[d]Effective since 1978, a farm is defined as a rural place from which $1,000 or more of agricultural products were sold, or normally would have been sold, in the reporting year. The first figures for 1978 are comparable with those for earlier years; the second with those for later years.
[e]Preliminary.

The tables on this page are not comparable. The *upper table* shows National Safety Council estimates of all accidental deaths of persons who lived on farms. For description of inclusions and exclusions, see first paragraph on page 100. The *lower table* shows deaths from injuries which occurred on farms to all persons, primarily farm residents, but includes others such as nonresident workers, hunters, and visitors. Excluded are farm home accidental deaths, transport deaths, and deaths of farm residents from accidents which occurred off farm property. Tabulations are understated as not all death certificates indicate place of accident.

Nontransport Deaths from Accidents on Farms by Type, 1970-1988

(excluding farm home deaths)

Year	All Types[a]	Machinery	Drowning	Firearms	Falls	Struck by Obj.	Fires, Burns	Elec. Curr.	Animals	Poisoning	Suffocation	Lightning
1970	1,795	444	282	155	125	310	57	83	63	39	46	29
1971	1,717	428	268	148	112	269	59	59	69	31	47	29
1972	1,712	452	262	142	120	262	40	64	70	28	54	26
1973	1,769	447	262	146	119	285	40	72	82	29	51	22
1974	1,617	377	234	109	118	292	30	86	54	41	50	21
1975	1,672	476	209	115	105	284	26	93	45	35	52	24
1976	1,438	372	175	88	84	277	44	76	59	29	42	14
1977	1,383	327	163	73	94	276	37	90	52	23	38	18
1978	1,346	325	166	90	85	272	30	75	33	34	49	20
1979	1,276	627[b]	142	74	56[b]	112[b]	15	64	40	23	38	13
1980	1,309	557	199	77	67	127	37	67	44	30	46	2
1981	1,192	550	117	93	57	111	41	64	44	11	37	8
1982	1,219	538	143	78	67	108	21	82	44	30	27	13
1983	1,089	517	118	80	55	92	20	36	38	34	24	8
1984	989	469	98	73	51	101	19	34	31	28	32	12
1985	1,006	477	101	86	55	102	26	27	32	17	29	6
1986	974	457	109	56	52	79	17	36	46	21	40	8
1987	945	458	94	43	56	88	23	40	44	12	22	10
1988[c]	831	405	78	46	58	76	17	26	28	8	23	12

Source: National Center for Health Statistics, *Vital Statistics of the United States*, except 1981 and 1982, *Multiple Cause-of-Death for ICD-9 1981 (1982) Data* (counts for selected states based on a 50 per cent sample).
[a]Includes some deaths not shown separately.
[b]Data not comparable with previous years due to classification changes in 1979.
[c]Latest official figures.

ENVIRONMENTAL HEALTH

Household hazardous waste

During the 1980s household hazardous waste became increasingly recognized as an environmental health problem, with efforts to manage it likewise expanding significantly. Programs to collect household hazardous waste have grown from a handful in 1981 to over 600 nationwide in 1989. Such programs are usually one-day community-sponsored efforts, but permanent programs have also increased from 6 in 1981 to 36 in 1989.

Household hazardous waste is defined as any material discarded from a home that may pose a threat to human health or the environment if disposed of improperly. Such materials can be toxic, corrosive, flammable, or explosive, but as household wastes they are specifically exempted from the 1976 EPA Resource Conservation and Recovery Act, the legislation which regulates disposal of other solid and hazardous wastes. Improper disposal of hazardous wastes, such as dumping in an ordinary landfill or pouring down a sewer system or onto the ground, can contaminate air and groundwater (including the drinking water supply), poison wildlife, damage sewer systems, and harm refuse collectors.

The most common household hazardous waste is used motor oil. One 1985 study of over 500 households in Massachusetts estimated that about one third of the households disposed of used motor oil. Almost 60 per cent of those discarding the oil did so on the ground, in the sewer or at an ordinary landfill. Another study of almost 400 households in New Mexico found that used motor oil made up about two thirds of the total household hazardous waste produced. Other common household hazardous wastes include cleaners and polishes, pesticides, insecticides, herbicides, drain cleaners, disinfectants, solvents, car batteries and antifreeze.

It is estimated that each household discards about 100 hazardous items each year and that about 0.5 per cent of the total household waste produced by weight is hazardous.

Source: Bass, E.S., Calderon, R.L., & Khan, M.E. Household hazardous waste: a review of public attitudes and disposal problems. *Journal of Environmental Health, 52* (6), May/June 1990, 358–361; Duxbury, D. Emerging prominence for HHW. *Waste Age, 21* (6), June 1990, 37–38, 40.

Low frequency electromagnetic radiation

Research is continuing regarding the association between the incidence of certain diseases and exposure to low frequency electromagnetic radiation such as that found near power lines, video display terminals (VDTs), and other appliances.

The first such study to find an association, published in 1979 by epidemiologist Nancy Wertheimer and physicist Ed Leeper, examined homes of almost 350 children in Denver who died of cancer before age 19. Children living near "high-current" lines were found to be two to three times as likely as others to die of cancer and leukemia. In 1988, David Savitz of the University of North Carolina published results of a more rigorous study intended to repeat the Denver research while correcting some methodological flaws. It found that children who lived in homes where the electromagnetic field measured above two milligauss had a 1.5 to 2 times greater risk of developing cancer or leukemia than other children. About 20 per cent of the homes in the study had fields measuring above that level compared to the average of one milligauss in most homes and offices.

Other studies have investigated the relationship between VDTs and risk of miscarriage and between use of electric blankets and miscarriage, birth defects and low birth weight.

The 50 to 60 studies regarding electromagnetic fields and health risks have mixed interpretations, and more research is being conducted to clarify these relationships.

Source: Electromagnetic waves: how real a hazard? *Harvard Medical School Health Letter, 15* (5), March 1990, 1–4; Kirkpatrick, D. Can power lines give you cancer? *Fortune, 122* (16), December 31, 1990, 80–85.

OTHER SOURCES

The following organizations may be useful for obtaining more current data or more detailed information on various subjects in *Accident Facts*.

American National Standards Institute
11 W. 42nd Street, 13th Fl.
New York, NY 10036
(212) 354-3300

Centers for Disease Control
1600 Clifton Road, NE
Atlanta, GA 30333
(404) 639-3534

Federal Highway Administration
400 7th Street, SW
Washington, DC 20590
(202) 366-0660

Federal Railroad Administration
400 7th Street, SW
Washington, DC 20590
(202) 366-2760

Hunter Education Association
P.O. Box 428
Brighton, IL 62012
(618) 372-8233

Insurance Information Institute
110 William Street
New York, NY 10038
(212) 669-9200

Insurance Institute for Highway Safety
1005 N. Glebe Road, Suite 800
Arlington, VA 22201
(703) 247-1500

International Association of Chiefs of Police
1110 N. Glebe Road, Suite 200
Arlington, VA 22201
(703) 243-6500

Mine Safety & Health Administration
Health & Safety Analysis Center
Division of Mining Information
P.O. Box 25367
Denver, CO 80225
(303) 236-2713

Motor Vehicle Manufacturers Association of the U.S., Inc.
7430 2nd Avenue, Suite 300
Detroit, MI 48202
(313) 872-4311

Motorcycle Safety Foundation
5525 Twin Knolls Road, Suite 330
Columbia, MD 21045
(301) 730-0402

National Center for Health Statistics
6525 Belcrest Road
Hyattsville, MD 20782
(301) 436-8500

National Clearinghouse on Alcohol and Drug Information
P.O. Box 2345
Rockville, MD 20852
(301) 468-2600
1-800-729-6686

National Collegiate Athletic Association
6201 College Boulevard
Overland Park, KS 66211-2422
(913) 339-1906

National Fire Protection Association
P.O. Box 9101
Batterymarch Park
Quincy, MA 02269-0910
(617) 770-3000

National Head Injury Foundation
1140 Connecticut Ave., NW, Suite 812
Washington, DC 20036
1-800-444-6443

National Highway Traffic Safety Administration
400 7th Street, SW
Washington, DC 20590
(202) 366-9550

National Institute for Occupational Safety and Health
(Health inquiries)
4676 Columbia Parkway, Cincinnati, OH 45226
(Safety inquiries)
944 Chestnut Ridge Rd., Morgantown, WV 26505

National Society to Prevent Blindness
500 E. Remington Road
Schaumburg, IL 60173
(708) 843-2020

National Spinal Cord Injury Association
600 W. Cummings Park, Suite 2000
Woburn, MA 01801
1-800-962-9629 (Hotline)
(617) 935-2722

National Sporting Goods Association
1699 Wall Street
Mt. Prospect, IL 60056-5780
(708) 439-4000

National Transportation Safety Board
800 Independence Avenue, SW
Washington, DC 20594
(202) 382-6735

Outdoor Power Equipment Institute
341 S. Patrick Street
Alexandria, VA 22314
(703) 549-7600

Social Security Administration
6401 Security Boulevard
Baltimore, MD 21235
(301) 965-7700

Transportation Research Board
2101 Constitution Avenue, NW
Washington, DC 20418
(202) 334-2935

U.S. Coast Guard
2100 2nd Street, SW
Washington, DC 20593
(202) 267-2229

U.S. Consumer Product Safety Commission
National Injury Information Clearinghouse
5401 Westbard Avenue, Rm. 625
Washington, DC 20207
(301) 492-6424

U.S. Department of Commerce
Bureau of the Census
Public Information Office
Washington, DC 20233
(301) 763-4040

U.S. Department of Labor
441 G Street, NW
Washington, DC 20212
(202) 523-1221 (BLS inquiries)
(202) 523-8151 (OSHA inquiries)

GLOSSARY

Accident is that occurrence in a sequence of events which usually produces unintended injury, death or property damage.

Accident type describes the occurrence leading to injury or property damage.

Agency or agent is the principal object such as tool, machine, or equipment involved in the accident and is usually the object inflicting injury or property damage.

Day (motor-vehicle accidents) is the time interval between sunrise and sunset.

Death from accident is a death which occurs within one year of the accident.

Disabling injury is an injury causing death, permanent disability, or any degree of temporary total disability beyond the day of the accident.

Farm, see footnote d, upper table, page 102.

Fatal accident is an accident which results in one or more deaths within one year.

Home is a dwelling and its premises within the property lines, including, in addition to the usual single-family dwellings and apartment houses, duplex dwellings, boarding and rooming houses, and seasonal cottages. Excluded from Home are barracks, dormitories, and resident institutions.

Incidence rate, as defined by OSHA, is the number of injuries and/or illnesses or lost workdays per 100 full-time employees. See also page 43.

Injury is physical harm or damage to the body resulting from an exchange, usually acute, of mechanical, chemical, thermal, or other environmental energy that exceeds the body's tolerance.

Motor vehicle is any mechanically or electrically powered device (except one moved by human power), not operating on rails, upon which or by which any person or property may be transported upon a land highway. The load on a motor vehicle or trailer attached to it, is considered part of the vehicle. Tractors and motorized machinery are included while self-propelled in transit or used for transportation. Also included are motor scooters, motorized bicycles and snowmobiles.
Nonmotor vehicle is any vehicle other than a motor vehicle, **except** a coaster wagon, child's sled, child's tricycle, child's scooter, wheelchair, roller skates, ice skates, skis, baby carriage, and similar means of transportation; persons using these latter means of transportation are considered pedestrians.

Motor-vehicle accident is any accident involving a motor vehicle in transport (in motion, in readiness for motion, or on a roadway, but not parked in a designated parking area) that results in death, injury or property damage. For descriptions of different types of motor-vehicle accidents, see pages 52 and 53.

Motor-vehicle traffic accident is a motor-vehicle accident which occurs on a trafficway—a way or place, any part of which is open to the use of the public for the purposes of vehicular traffic.

Motor-vehicle nontraffic accident is any motor-vehicle accident which occurs entirely in any place other than a trafficway.

Night (motor-vehicle accidents) is the time interval between sunset and sunrise.

Nonfatal injury accident is an accident in which at least one person is injured, and no injury results in death.

OSHA, see page 43 for Occupational Safety and Health Administration definitions.

Pedalcycle is a vehicle propelled by human power and operated solely by pedals; excludes mopeds.

Pedestrian is any person involved in a motor-vehicle accident who is not in or upon a motor vehicle or non-motor vehicle. (See definition of motor vehicle.) Included as pedestrians are persons injured while using a coaster wagon, child's tricycle, roller skates, etc. Excluded are persons boarding, alighting, jumping or falling from a motor vehicle in transport.

Permanent disability (or permanent impairment) includes any degree of permanent nonfatal injury. It includes any injury which results in the loss, or complete loss of use, of any part of the body, or any permanent impairment of functions of the body or a part thereof.

Property damage accident is an accident which results in property damage, but in which no person is injured.

Public accident is any accident other than motor-vehicle that occurs in the public use of any premises. Includes deaths in recreation (swimming, hunting, etc.), transportation except motor-vehicle, public buildings, etc., and deaths from widespread natural disasters even though some may have happened on home premises. Excludes accidents to persons in the course of gainful employment.

Rural (for motor-vehicle reporting) includes places of less than 5,000 inhabitants, except those classified as urban by the U.S. Census Bureau. (See urban definition below.)

School bus, see page 70.

Temporary total disability is an injury which does not result in death or permanent disability, but which renders the injured person unable to perform regular duties or activities on one or more full calendar days after the day of the injury.

Urban (for motor-vehicle reporting) includes places of 5,000 or more inhabitants, and the towns, townships, and other areas classified as urban by the U.S. Census Bureau.

Work hours are the total number of hours worked by all employees. They are usually compiled for various levels, such as, an establishment, a company, or an industry. A work hour is the equivalent of one employee working one hour.

Work injuries (including occupational illnesses) are those which arise out of and in the course of gainful employment regardless of where the accident occurs. Excluded are work injuries to private household workers and injuries occurring in connection with farm chores which are classified as home injuries. (For OSHA definitions, see page 43.)

Workers are all persons gainfully employed, including owners, managers, other paid employees, the self-employed, and unpaid family workers, but excluding private household workers.

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